Official Publication of Africa Health Research Organization July 2019 Vol. 21 (II)

Annals of Tropical Medicine and Public Health

ISSN: 1755-6783

International indexed journal

The journal is registered with the following abstracting partners: Baidu scholar, CNKI, EBSCO Publishing's Electronic database, Google Scholar, National Library, ProQuest, and African Index Medicus. It is indexed with DOAJ, ISI, EMASE, ESCI, Index Copernicus, Scimago Journal Ranking, and SCOPUS

Impact factor for 2018: 2.75

Knowledge of students regards antibiotic consumption for upper respiratory tract infections in Basra

Maysaloon A. AL-Sadoon

Abstract:

Upper respiratory tract infections (URTIs) are characterized as sicknesses brought about an intense disease linking the upper respiratory tract, such as the nose, sinuses, pharynx and/or larynx. This investigation was attempted to evaluate the information, frames of mind and practices of Iraqi medical students towards the utilization of anti-microbial agents in the treatment of URTIs. across sectional investigation questionnaire design assumed to investigate the utilization of anti-microbial agents among (209)student in University of Basra college of Medicine. The majority of respondents indicated that they had previous knowledge of antibiotic agents 99% should be used in the treatment of bacterial infections, 3.3% thought that they may also be used in the treatment of viral infections. In Three themes of learning (advantages, dangers and utilization of anti-microbial agents), a majority of participants had high level of awareness on the benefits of antibiotics prevent the complications of colds (89.5%). while, a minority of them had adequate knowledge on the benefits of using antibiotics, such as antibiotics could not shorten the length of colds (19.1%). However, 95.7% of all subjects surveyed had proper understanding of the misuse of antibiotics that could lead to drug resistance.

Introduction:

Upper respiratory tract infections (URTIs) are characterized assicknesses brought about an intense disease linking the upper respiratory tract, such as the nose, sinuses, pharynx and/or larynx (1). This lead to maladies, for example, the tonsillitis and common cold. Greatest URTIs are viral and self-restricting and do not need antimicrobial treatment (2,3). (URTIs) cause generous sickness each year. The yearly occurrence is ~2 to 4 cases per adult (4,3). Among healthy persons 65 years old, URTIs represent a huge number of days of sickness and work downfall, numerous of health care proficient visits and antimicrobial drugs, and billions of dollars in medicinal services and lost efficiency costs (5-7). The inappropriate and unreasonable utilization of anti-microbial agents has brought about the development of highly resistant bacteria (8).Antimicrobial resistance is an overall issue, adding to rising medicinal services costs, and the transformation of microscopic organisms prompting severe, fatal infections. In the United States (US), two million individuals' get resistant bacterial diseases every year and 23,000 individuals die every year because of these anti-microbial resistant bacterial diseases (9). Resistant bacterial diseases have been related to the overprescribing and abuse of antimicrobial, definitely for upper respiratory diseases (10). In developing countries, anti-microbial are too much recommended and can be gotten, in numerous cases, without a description. Aside from patients' discernments and expectations, (8) Information held by healthcare expertsis a main element concerning the description of anti- microbial agents. The profundity of information healthcare experts has in connection to the best possible utilization of anti- microbial is fundamental in spreading the correct message inside communities. Specialist doctor or a medical student understudy experiences undergoes great training to have the ability to prescribe antimicrobial agent. Medical pupils are the eventual fate of medicine to mainstays of human services. Their beliefs, attitudes and behaviors practices in regards to the utilization of anti-microbial agents tremendously affect the outcomes related with like usages in Iraq. Therefore, it is essential to assess their insight, frames of mind and applies to anti-microbial agents' utilization, explicitly in the treatment of URTIs. In light of the above mentioned, this investigation was attempted to evaluate the information, frames of mind and practices of Iraqi medical students towards the utilization of anti-microbial agents in the treatment of URTIs.

Materials and Methods:

This study assumed a cross sectional investigation questionnaire design to investigate the utilization of anti-microbial agents among student in University of Basra college of Medicine. Information was gathered over a time of Three months among February and April 2019. Information was gathered from students utilizing a consistent self - directed questionnaire (supplemental material), and clarified the investigation's purpose to respondents and acquired written consent for the survey to be filled secretly and returned within an hour. We made a few inquiries with sub things with various reaction choices including numerous decisions. We built up the study dependent on previously available international quantitative and qualitative scientific investigations (11,12).Ethical approval was allowed by the University of Basra College of Medicine, and consenting was suggested as the members consented to fill in the survey. Data were analyzed using SPSS (version 22), and $\chi 2$ tests were performed to identify data of the present study.

Result:

The study sample represented students at the University Of Basra College Of Medicine. Among participants for whom complete data were available (N= 209). The majority of participants in this study were students at Fifth Year (48.8%), followed by students at Sixth and Fourth Year (18.7%, 18.2%) respectively. In addition, the majority were aged between 24-26 years (47.4%) also, females considered as (64.1 %,) in this study, this data analyzed as illustrated in Table -1.

Table- 1 Participants' characteristics (N=209).

Factor	**Category**		Number (%)
Students	209	First Year	2(0.9)
		Second Year	6(2.9)
		Third Year	22(10.5)
		Fourth Year	38(18.2)
		Fifth Year	102 (48.8)
		Sixth Year	39 (18.7)
Gender	Male		75 (35.9)
	Female		134 (64.1)
Age	>20 20-22 22-24 24-26		4 (1.9) 23 (11) 83 (39.7) 99(47.4)

The majority of respondents indicated that they had previous knowledge of antibiotic agents 99% should be used in the treatment of bacterial infections, 3.3% thought that they may also be used in the treatment of viral infections.

Table-2 Learning about Anti-biotic use for URTIs:

Subjects' awareness about the effects of antibiotic medications	Agree, N(%)
Anti-biotic are successful in treating contaminations brought about by Bacteria	207 (99%)
Anti-biotic are successful in treating diseases caused by exposure to virus	7 (3.3%)

The apparent requirement for anti-microbial treatment for respiratory tract disease related side effects extended from 13.4% for a nose congestion with headache to 58.9% for coughing that occurs for at least half a month or longer. Instead, Common requirements for anti-microbial consultation with a doctor extended from 67.5% for continuous cough long-lasting by two weeks, to 6.7 % for a Throat congestion. (Table 3).

Signs exhibited	Requirements for anti-microbial treatment (dependably/regularly), N (%)	Requirements for anti-microbial consultation (dependably/regularly), N (%)
Throat congestion	50(23.9%)	14 (6.7%)
Headache with nose congestion	28 (13.4%)	32 (15.3%)
Coughing accompanied by fever	109 (52.2%)	64 (30.6%)
Length of coughing half a month or longer	123(58.9%)	141(67.5%)
Respiratory tract malfunction		
Common cold	75(35.9%)	
Acute bronchitis	120 (57.4%)	
Pneumonia	142 (67.9%)	

Table3. Responders' requirement for antimicrobial treatment and need to counsel for respiratory tract Signs and infections (N= 209):

In Three themes of learning (advantages, dangers and utilization of anti-microbial agents), a majority of participants had high level of awareness on the benefits of antibiotics prevent the complications of colds(89.5%).while, a minority of them had adequate knowledge on the benefits of using antibiotics, such as antibiotics could not shorten the length of colds (19.1%).However,95.7% of all subjects surveyed had proper understanding of the misuse of antibiotics that could lead to drug resistance. Also, the highest rating of awareness about anti-microbial use in URTIs was associated with frequent incomplete the treatment plan using antibiotics which lead to the drug resistance (75. 1%).Table-4

Table-4 Knowledge about antibiotic use for URTIs among respondents:

Benefits of antibiotics: Antibiotics reduce the duration of colds	40 (19.1%)
Antibiotics prevent the complications of colds	187(89.5%)
Risks of antibiotics: Unnecessary use of antibiotics causes drug resistance	200(95.7%)
Antibiotics may cause drug allergy	90(43.1%)
Use of antibiotics: You can stop taking antibiotics when the symptoms improve**.**	31(14.8%)
Incomplete the treatment courses of antibiotics reduce the effectiveness of the drugs.	102(48.8%)
Frequent incomplete the treatment course of antibiotics contributes to the drug resistance.	157(75.1%)

Discussion:

This study aimed to recognize antimicrobial-related performances between an undergraduate of medical college in Basra South of Iraq. That recognized majority of them had proper information, attitudes, and performances about antimicrobial utilization for URTIs. But information on antimicrobial efficiency differs broadly with alterations in sex and educational level of practice as medical student. Experiences to gain antimicrobial without a description are also common midst medical students themselves**.** The information on the utilization of antimicrobial against disease caused by bacteria not viral, and the requirement to finish the medication course to minimize antimicrobial resistance, are greater than what has been described in an investigation on the community in the Netherlands (11), the medical experience of our applicants may consider for those variances. Those who responded wrongly were commonly students at first educational level who had not established courses correlated to antibiotics, because the studying of medical microbiology are not provided at the first stages. Other causes could be that other related courses, such as pharmacology, internal medicine and epidemiology, also are not given to students at their first stages of medical college. This is similar to results of a large study within Chinese students (12). In this study95.7%of participants distinguished that unsuitable utilization of antimicrobial lead to drug resistance; however, their information on the cause of antimicrobial resistance was greater than that identified in Hong Kong 79 %(13). The greater information marks found midst participants could probably due to they would have newly learned around the utilization of antimicrobials in a medical study at their college. Expectations for antimicrobial were higher (67.9%)for the disease label ‘Pneumonia’ than for any of Respiratory tract malfunction, while(23.9%)thought that antimicrobials were required for throat congestion, worldwide study of Europe, Africa, and Asia also showed similar outcomes (14). A great number of patients

worldwide misunderstand signs of disease, whether by virus or bacteria. Patients' insufficient information on antimicrobial utilization influenced expectations or demands for antimicrobial (15). Bacterial resistance to antibiotics was indicated among our study group and only a small percentage assumed it tolerable to end the course of antimicrobial when the signs disappear, and the applicants were aware of the hostile effects related to the extreme and incorrect use of antibiotics in the emergence of bacterial resistance. Taking antimicrobial over the counter, without a physician's description, has been a common practice in developing countries and is constant with other studies (16). In a study conducted in the UK, final year medical students were given the names 'Ciproxin' and 'ciprofloxacin' as an example, and were asked to name six generic or approved antibiotics by their proprietary name. Sixty per cent of them only knew the generic names for Augmentin and Fucidin, 40% were correct on Flagyl and 10% on Zinacef, but none had the correct generic name for either Targocid or Magnapen (17). In another study conducted in Malaysia, also on final year medical and pharmacology students, diphenhydramine was correctly identified by 97% of the students as the antibiotic used for treatment of URTIs, while only 75.6% correctly identified that cefotaxime belonged to third-generation cephalosporins(18).

References:

1. Eccles M , Grimshaw J , Johnston M , Steen N , Pitts NB , Thomas R , Glidewell E , Maclennan G *et al*. Applying psychological theories to evidence-based clinical practice: identifying factors predictive of managing upper respiratory tract infections without antibiotics. Implement Sci **2007**; 2: 26.

2.Gonzales R, Malone DC, Maselli JH, Sande MA. Excessive antibiotic use for acute respiratory infections in the United States. Clinical Infectious Diseases **2001**; 33(6): 757-62.

3. Heikkinen T, Järvinen A. The common cold. Lancet **2003**;361:51–9.

4. Monto AS. Epidemiology of viral respiratory infections. Am J Med**2002**; 112(Suppl):4S–12S.

5. Adams PF, Hendershot GE, Marano MA. Current estimates from theNational Health Interview Survey, 1996. National Center for HealthStatistics. Vital Health Stat **1999**; 10(200).

6. Fendrick AM, Monto AS, Nightengale B, Sarnes M. The economicburden of non-influenza–related viral respiratory tract infection in theUnited States. Arch Intern Med **2003**; 163:487–94.

7. Bramley TJ, Lerner D, Sarnes M. Productivity losses related to thecommon cold. J Occup Environ Med **2002**; 44:822–9.

8.Alumran A, Hou XY, Hurst C. Assessing the overuse of antibiotics inchildren in Saudi Arabia: validation of the parental perception onantibiotics scale (PAPA scale). Health Qual Life Outcomes**2013**;11:1–8.

9.Centers for Disease Control and Prevention. (**2013**). Antibiotic resistance threats in the United States, 2013. Retrieved fromhttp://www.cdc.gov/drugresistance/federal-engagement-in-ar/national-strategy/index.html.

10.Crocker, A., Alweis, R., Scheirer, J., Schamel, S., Wasser, T., & Levingood, K. Factors affecting adherence to evidence-based guidelines in the treatment of URI, sinusitis, and pharyngitis. Journal of Community Hospital Internal Medicine Perspectives**2013**:3(2), 1-4.

11.Cals JWL, Boumans D, Lardinois RJM, Gonzales R, Hopstaken RM, Butler CC, et al. Public beliefs on antibiotics and respiratory tract infections: an internet-based questionnaire study. Br J Gen Pract**2007**;57:942-7.

12. Huang Y, Gu J, Zhang M, Ren Z, Yang W, Chen Y, et al. Knowledge, attitude and practice of antibiotics: a questionnaire study among 2500 Chinese students. BMC Med Educ **2013**;13:163.

13.You JHS, Yau B, Choi KC, Chau CTS, Huang QR, Lee SS. Public knowledge, attitudes and behavior on antibiotic use: a telephone survey in Hong Kong. Infection **2008**; 36: 153-7.

14.Pechere JC. Patients' interviews and misuse of antibiotics. Clin Infect Dis **2001**; 33(suppl 3): 170-3.

15.Parimi N, Pinto Pereira LM, Prabhakar P. Caregivers' practices, knowledge and beliefs of antibiotics in paediatric upper respiratory tract infections in Trinidad and Tobago: a cross-sectional study. BMC Fam Pract **2004**; 5: 28.

16. Widayati A, Suryawati S, de Crespigny C, HillerJ. E.. Beliefs about the use of nonprescribed antibiotics among people in Yogyakarta City, Indonesia: a qualitative study based on the theory of planned behavior. Asia Pac J Public Health **2015**;27: 402–13.

17. Wright EP, Jain P. Survey of antibiotic knowledge amongst final year medical students. J Antimicrob Chemother 2004;53:550–1.

18.Jamshed SQ, Elkalmi R, Rajiah K, Al-Shami AK, Shamsudin SH, Siddiqui MJ, et al. Understanding of antibiotic use and resistance among final-year pharmacy and medical students: a pilot study. J Infect Dev Ctries **2014**;8:780–5.

The Effect of Cognitive Modeling Strategy on the Achievement and Creative Thinking of Mathematical Training for Students of the Faculty of Physical Education and Sport Sciences

Mushtaq Abdul Redha Mashi[1], Ali Khuman Alwan [2], Ammar Muthanna Jameel [3]

1.1 Introduction and Importance of Research

Perhaps the most prominent feature of our time during the last two decades is the tremendous scientific progress in the fields of knowledge and technology. This progress was of great importance to the growth of human knowledge and its quantity and quality. Other Mathematical training is one of the sciences, which includes a huge amount of information and scientific rules, so the teaching strategies are varied and varied as the teacher deems appropriate and all aim to achieve the desired goals. The teaching strategy is defined as the plans used by the teacher in order to help pupils gain experience in a particular subject and the acquisition process this is a planned, organized, and sequential setting where the ultimate goal of learning is defined. Many scientists believe that the strategy of cognitive modeling is a powerful way to create and generate motivational changes such as arbitration of self-efficacy and insistence on the achievement of goals and objectives. It loudly directs and wonders and actually says what he thinks and how he organizes and plans to work and how he reviews himself and meditates and manages the time he devotes to the performance of the educational task that he offers. As for the achievement in its modern concept is meant information and skills acquired by learners as a result of the study of a specific subject or unit of study. Achievement provides real indicators indicate the progress made by the student in the light of objective educational objectives in advance and helps the teacher to make objective judgments about the success of teaching methods which he used to organize the educational process. Creative thinking is the most sophisticated type of thinking and requires highly efficient and effective mental abilities, especially in finding solutions and extraordinary ideas. Creative thinking is a mental process in which the learner interacts with the many experiences he faces in order to absorb the elements of the situation in order to reach a new understanding that achieves a genuine solution to his problem or discover something new valuable to him and the society in which he lives.

It is clear from the above the importance of the current research as it comes

- ✓ The importance of experimenting with modern teaching strategies to prove their effectiveness, including the strategy of cognitive modeling in the achievement and creative thinking of the second stage students in the Faculty of Physical Education and Sports Science for the subject of sports training.
- ✓ Teach teachers the importance of cognitive modeling strategy as it emphasizes teaching students self-learning techniques.
- ✓ Developing creative thinking as one of the goals of education in all stages.

1.2 Research Problem

Sports training are one of the subjects that require the existence of high intellectual abilities of the student; it suggests the existence of examples from all other scientific disciplines and is hardly separate from these materials. Hence we can ask the following questions to answer the research problem

- ✓ Is the cognitive modeling strategy influenced the achievement of students of the second stage in the Faculty of Physical Education and Sports Science for sports training material.
- ✓ Does the cognitive modeling strategy have an impact on the creative thinking of the second stage students in the Faculty of Physical Education and Sports Science for the subject of sports training?

1.3Research Objectives : The research aims to identify

- ✓ The effect of cognitive modeling strategy on achievement among second stage students in mathematical training.
- ✓ The effect of cognitive modeling strategy on the creative thinking of the second stage students in mathematical training.

1.4Research hypotheses:

- ✓ The cognitive modeling strategy has a clear effect on the academic achievement of the second stage students in the mathematical training.
- ✓ The cognitive modeling strategy has a clear effect on the creative thinking of the second stage students in the mathematical training.

1.5Research Areas

1. Human domain/sample of students in the second phase in the Faculty of Physical Education and Sports Science.
2. Spatial domain/classrooms in the Faculty of Physical Education and Sports Science.
3. Time domain / 22/10/2018 until 23/3/2019

3.1 Research Methodology: The researchers used the experimental method for its relevance and research problem

3.2: The research community and its sample: The research community was determined from the second stage students in the Faculty of Physical Education and Sport Sciences for the academic year 2018 - 2019 and a sample was randomly selected two divisions from the existing group of people are divisions (d, b) after the process of equivalence of the two samples Terms of study variables. As shown in the following table.

variable	Experimental group		Coefficient of variation	Control group		Coefficient of variation
	Arithmetic mean	Arithmetic mean		Arithmetic mean	standard deviation	
Chronological age	21.73	4.21	19.37	21.24	3.97	18.69
Student's degree	32.15	8.24	25.62	30.22	7.18	23.75
IQ test [1]	54.16	9.41	17.37	55.31	10.13	18.31
Test Info	27.89	6.21	22.26	28.41	7.82	27.78

- Creative thinking:
- Measures:

First: Identify the components of creative thinking: The researchers looked at a group of scientific sources that are interested in creative thinking. It was found to be composed of three components. Relative to (7) experts.

No	Ingredients	Total scores	Relative importance

1	Fluency	32	91.42
2	Flexibility	29	82.85
3	originality	31	88.57
Degree of acceptance		57.14	

Second: Conducting homogeneity and equivalence for the individuals of the sample: (Table3) Shows the homogeneity of the experimental group members.

No	Variables	Measuring unit	Arithmetic mean	standard deviation	Coefficient of variation	Significance
1	Fluency	Degree	13.40	2.39	17.82	homogeneous
2	Flexibility	Degree	13.21	2.03	15.15	homogeneous
3	originality	Degree	13.52	0.78	5.78	homogeneous

It is clear from Table (3) that the two groups are homogeneous since the value that appeared below (30) and this means that the individual homogeneous in creative thinking.

Table (4) shows the equivalence of individuals of the first and second group for the variables of creative thinking.

No	variable	Experimental group		Control group		Values T	Significance
		Arithmetic mean	standard deviation	Arithmetic mean	standard deviation		
1	Fluency	13.40	2.39	14.37	2.39	0.97	0.33
2	Flexibility	63.21	2.00	14.39	2.00	1.32	0.19
3	originality	13.52	0.78	14.05	0.78	1.52	0.14

It is clear from the table that all random variables mean that the two groups are equal in creative thinking.

Third: Determine the objective of building the scale:

1- The first exploratory application of the achievement test: The test was applied to a sample of (30) students from the Faculty of Physical Education and Sport Sciences from Tuesday after completing the requirements of the prescribed subject and informing the students of the test date a week before its application. (28) Minutes by adding the time taken by the exam to the number of examiners.

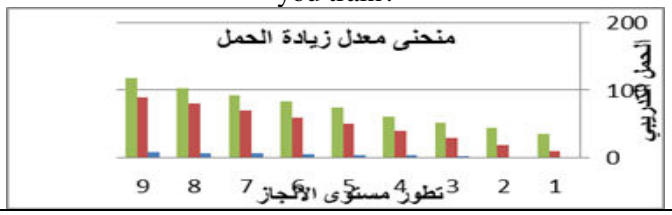
2- Statistical analysis of the achievement test items: The test was applied to a sample of the original community of (100) students. After correcting the answers, the answers were arranged from the highest score of (48) to the lowest score of (15). The two best groups to represent the research sample.

3-3 The purpose of building the scale: One of the reasons that called for the researcher to put this test and the scale is not to touch and go into such a study of university students in sports training, regardless of the existence of tests or measures of creative thinking in other studies.

3.3.1 Validity of paragraphs: A form of scale for creative thinking was prepared in its initial form and included (25) distributed paragraphs. (Ka 2) was used to identify valid paragraphs from others. The results showed the validity of (22) paragraphs to represent creative thinking distributed over the three components.

Table (2) shows the results of the test (Ka2) for expert opinions on the validity of the paragraphs of the scale for creative thinking.

No	Paragraphs	Experts		Ka2	Acceptable ratio	Significance
1	The situation of the athlete during the competition of jittering and instability and the frequent errors and you have five minutes intermission to rest What is your role in the process of re-hospitalization of the player?	12	0	12.00	100	moral
2	Do you have training elements (strength - flexibility - compatibility) What is the training priority for these elements and the time taken to implement them?	12	0	12.00	100	moral
3	You were asked to perform the training elements (agility - table) in a circular training unit consisting of 3 exercises List a group of exercises develop these qualities with mentioning the name of the event adopted?	11	1	8.33	91.66	moral
4	At any time the calendar module is used	8	4	1.33	66.66	moral
5	Find the triple relationship between (intensity - size - comfort) in your special activity)	10	2	5.33	83.33	moral

6	What is the reason for the trainers to deal with the intensity and comfort of your preparation period	10	2	5.33	83.33	moral
7	You have a mixture of training elements for the day (strength - speed - agility - flexibility) Where is the character of agility of the overall training process with an explanation of reason?	11	1	8.33	91.66	moral
8	You have a large area of preparation period (general - private - semi-competitions) How much time do you think to train the square and field team in preparation for the university championship according to this preparation?	11	1	8.33	91.66	moral
9	How many special training units for the table with the name of the event you are sponsoring?	12	0	12.00	100	moral
10	For the purpose of passing the opponent in a particular skill such as flexibility What steps help your team player in it?	10	2	5.33	83.33	moral
11	There is a difference in the percentages of giving the schematic aspect between applicants and young people how to find it	11	1	8.33	91.66	moral
12	Where to place compatibility exercises in the module and why	7	5	0.33	58.33	moral
13	Trainers differ in the number of training summits per week. What is your opinion? If your players level is ahead	12	0	12.00	100	moral
14	Before the race, the training units are experiencing a decrease in the volume of training with a slight increase in intensity. With the name of the activity that suits your mental ability	12	0	12.00	100	moral
15	How does the coach deal with the outstanding player in the exercise and did not perform in the field?	10	2	5.33	83.33	moral
16	Runner 100 m got the best achievement in the race (10) seconds required training strict 90% - 80% What time required that corresponds to the intensity?	12	0	12.00	100	moral
17	You have the following chart How can you reach the athlete to this level of progress in the training process depending on the type of activity you train? 	11	1	8.33	91.66	moral
18	What are the technical stages in the speed of the 100m racer?	11	1	8.33	91.66	moral
19	Can I use fitness exercises one or two days before the competition?	9	4	3.00	75.00	moral
20	How do we differentiate between absolute density and relative density?	12	0	12.00	100	moral
21	How is the intensity used in exercise performance measured?	12	0	12.00	100	moral
22	What is the use of flexibility after each exercise and strength training?	10	2	5.33	83.33	moral

23	Between isometric (fixed), isotonic (mobile) and Estonia (composite)?	11	1	8.33	91.66	moral
24	When is the method of repetitive and high-intensity interval training used in the preparation period (public-private) and why?	11	1	8.33	91.66	moral
25	Speed development exercises should be performed before strength and stretching exercises if the goal of the training module is to develop maximum speed in fast running. Why do trainers use work in their activities and can this concept change in your view?	11	1	8.33	91.66	moral

Tabular value (Ka 2) = 3.84 at the degree of freedom (N-1) and the level of significance (0.05) were excluded three paragraphs (19-12-4)

3.3.2 Exploratory Application of the Creative Thinking Scale: The exploratory experiment was conducted with the team assisting the research sample consisting of (8) trainers and randomly from the certified trainers from outside the basic experimental research sample on 18/2/2018.

- ✓ Identify the clarity of the paragraphs of the scale and its instructions.
- ✓ Identify the time required to answer.
- ✓ Identify the obstacles facing the researcher in the application of the final measure.
- ✓ Identify the effectiveness of the answer.
- ✓ Knowledge of the efficiency of the assistant team.

It was clear from this that the response time may range from (52-62) minutes and that all paragraphs were clear and understandable to the trainers. Therefore, the researcher determined the time required for the test is (60) minutes to complete the optional process for all trainers.

3-4 Basic Experience:

During which the scale is applied to the sample and this application is considered pre-test and its results are used for the purpose of statistical analysis of the paragraphs and test validity and exclude the invalid depending on the discriminatory strength and internal consistency of each of them as well as extract indicators of stability and honesty of the scale if the scale or test should have some basic scientific foundations, the most important of which is the consistency of his degrees and honesty. The scale was applied to the research sample number (24) on 27/2/2019 and by (22) paragraphs.

3.4.1 Scientific bases of the paragraphs of the scale: In this regard (Ebel) "that the aim of this procedure is to maintain the good paragraphs in any scientific measure or instrument" [2]. The researcher relied on two methods of analysis of paragraphs, namely, the method of the two groups and the coefficient of internal consistency.

First: the method of the two groups: For the purpose of detecting the discriminatory ability of the paragraphs of the scale was converted sample to degrees as a result of correction by experts and was determined the total score of the scale and then arrange the forms according to the total degrees descending from the highest score to the lowest score. The researcher used the method of 50% because the sample is small and after applying the test (T.Test) to two independent samples to identify the statistical significance of the difference between the upper and lower groups of the paragraphs of the scale. At the significance level (0.05).

Table (3) shows the tabular value, the level of significance, the degree of freedom and the percentage used for the scale as well as the validity statement.

Table (3) shows the tabular value, the level of significance, the degree of freedom and the percentage used for the scale as well as the validity statement

No	Paragraphs	The upper group		Minimum group		Values T C alculated	Significanc e
1	The situation of the athlete during the competition of jittering and instability and frequent mistakes and you have five minutes intermission to rest What is your role in the process of re -hospitalization of the player?	2.32	1.68	4.59	0.00	4.59	0.00
2	Do you have training elements (strength - flexibility - compatibility) What is the training priority for these elements and the time taken to implement them?	2.61	2.08	5.35	0.00	5.35	0.00
3	You were asked to do the training elements (agility - schedule) in a circular training unit consisting of 3 exercises List of exercises Develop these attributes with the name of the approved event?	2.64	1.84	3.62	0.00	3.62	0.00
4	Look for the triple relationship between (density - size - comforts) in your own activity.	2.71	2.07	4.38	0.00	4.38	0.00
5	What is the reason for the trainers to deal with the intensity and comfort of your preparation period	2.95	2.73	1.97	0.06	1.97	0.06

6	You have a mixture of training elements for the day (strength - speed - agility - flexibility) Where is the character of agility of the overall training process with an explanation of reason?	2.94	2.12	0.70	0.00	0.70	0.00
7	You have a large area of the preparation period (public-private - quizzes). How much time do you think of training the field and field team in preparation for the university championship according to this preparation?	2.03	2.08	5.26	0.00	5.26	0.00
8	How many special training units for the table with the name of the event you are sponsoring?	3.01	2.18	5.52	0.00	5.52	0.00
9	For the purpose of passing the opponent in a particular skill such as flexibility What steps help your team player in it?	2.95	2.60	1.67	0.11	1.67	0.11
10	There is a difference in the percentages of giving the schematic aspect between applicants and young people how to find it	3.83	2.34	4.98	0.00	4.98	0.00
11	Trainers differ in the number of training summits per week.What is your opinion? If your players level is ahead	3.47	2.34	5.31	0.00	5.31	0.00
12	Before the race The training units are experiencing a decrease in the size of the training with a slight increase in intensity, how many days do you think before the race ?With the name of the activity that suits your mental ability	2.83	2.41	2.92	0.01	2.92	0.01
13	How does the coach deal with the outstanding player in the exercise and did not perform in the field?	3.01	2.93	0.41	0.69	0.41	0.69
14	Runner 100 m got the best achievement in the race (10) seconds required training tight - %90 %80What time required that corresponds to the intensity?	2.95	2.27	3.69	0.00	3.69	0.00
15	You have the following chart How can you reach the athlete to this level of progress in the training process depending on the type of activity you train?	3.38	2.34	4.98	0.00	4.98	0.00

							
16	What are the technical stages in the speed of the100 m racer?	2.49	1.88	4.10	0.00	4.10	0.00
17	How do we differentiate between absolute density and relative density?	2.67	2.12	2.72	0.01	2.72	0.01
18	How is the intensity used in exercise performance?	2.58	1.86	7.81	0.00	7.81	0.00
19	What is the use of flexibility after each exercise and strength training?	2.61	2.23	1.61	0.12	1.61	0.12
20	Between isometric (static), isotonic (mobile) and Estonia (composite)?	2.73	2.28	2.15	0.04	2.15	0.04
21	When and how often is iterative and high-intensity interval training in the preparation period (public-private)?	2.87	2.31	4.79	0.00	4.79	0.00
22	Speed training exercises should be conducted before strength training and exercise if the goal of the training unit is to develop maximum speed in running. Why do trainers use work in their activities and can this concept change in your view?	2.68	1.93	4.19	0.00	4.19	0.00

3.5 Coefficient of Internal Consistency:

A - The correlation coefficients of each paragraph to the total score of the scale in a way of internal consistency: This method was used by calculating the Pearson correlation coefficient between the scores of the sample individuals on each paragraph and the total score of the scale, note that the forms that were analyzed are the same as those analyzed by the two extremist groups. According to this procedure (4) paragraphs were excluded where the correlation coefficients were according to the degree of freedom (22) and the level of significance (0.05).

B - Parameter correlation coefficients in the total score of the sub-scale to which they belong: The coefficient of distinction was calculated by the correlation between the degree of each paragraph and the total score of the sub-scales of the scale by calculating the correlation coefficients of Pearson on the basic experiment sample. Correlation with the overall score is high as the paragraph measures the phenomenon measured by the entire test. To find out the

statistical significance, it was compared with the value of the index coefficient (0.40) at the degree of freedom (22) and the level of significance (0.05). A can be inferred that the measure contains paragraphs that students can have excellence in creative thinking.

Table (4) shows the correlation coefficient of each paragraph with the total score of the scale and the sub-domain by the method of internal consistency.

No	Paragraph link to domain	Paragraph link to scale	T	Paragraph link to domain	Paragraph link to scale
1	0.860	0.867	10	0.737	0.821
2	0.932	0.889	11	0.815	0.888
3	0.847	0.687	12	0.942	0.736
4	0.865	0.881	13	0.775	0.746
5	0.896	0.879	14	0.551	0.463
6	0.783	0.614	15	0.627	0.532
7	0.808	0.853	16	0.856	0.916
8	0.942	0.736	17	0.622	0.439
9	0.930	0.707	18	0.780	0.821

3. The correlation coefficient between the sub-scales and the overall result of the Creative Thinking Scale was derived: the correlation coefficients (Pearson) between the scales of the sub-scales and the overall score of the scale and of the main sample members.

Table (5) shows the correlation coefficients of the sub-scales with the total score of the creative thinking scale

Total marks	originality	Flexibility	Fluency	Domain type
---------	----------	---------	1.00	Fluency
---------	----------	1.00	0.662	Flexibility
---------	1.00	0.674	0.886	originality
1.00	0.916	0.887	0.919	Total marks

The table shows that all the correlation coefficients of the total metrics are statistically significant at the degree of freedom (22). And significance level (0.05).

6.3 Scientific Basis of the Scale: Includes psychometric properties of the scale.

3.6.1 Validity of the scale:

Virtual validity: "A preliminary examination of the validity of the contents of the test by a panel of specialists and experts to assess compliance with the purpose for which it was established" [4] was extracted by presenting the measure paragraphs to the expert group and taking their views on the validity of each paragraph of the appropriate metrics for the scale of creative thinking and the extent of that is shown in Table (5)

3.6.2 Stability: means the degree of measurement based on the analysis of the psychological composition of the property to be measured or in the light of the concept given by myself. [5] The validity of building the scale in terms of defining its concepts and formulating paragraphs as well as verification through the following indicators.

- The two groups method:
- Internal consistency:

There are several ways to calculate stability: re-application, equivalent images, half-fraction, Koder-Richardson equation, and Alpha Cronbach equation. To verify the stability of the scale, the researchers used two methods (half-fraction and alpha-Cronbach coefficient).

1. Midway segmentation: "This method measures the internal consistency of the model clauses, indicating homogeneity in the stability of performance and stability at the answer clauses and each field as it is the most commonly used method of extracting stability because it avoids defects of other methods. [6]

Table (6) shows the midpoint retail stability factors for the scale

No	The name of the variable	Correlation coefficient before correction	Correlation coefficient after correction
1	Fluency	0.838	0.912
2	Flexibility	0.913	0.955
3	originality	0.620	0.766

2. The Kronbach Alpha Factor: Derive the general image of the Kronbach stability equation called the alpha coefficient (Koder-Richardson equation).

Table 7 illustrates the stability factor in the Alpha-Cronbach equation for creative thinking.

Stability coefficient	Metric name
0.864	**Creative thinking**

3.6.3 Scale correction:

The degree to which each trainer receives the result of his answer to any paragraph of the scale (18) paragraph, which reflects what creative thinking represented so that (6) paragraphs for each component.

The researchers mentioned earlier that in agreement with the supervisor was identified a group of experts for the purpose of correcting the different answers to the instructors about the paragraphs with the same experts to fix the pre- and post-test correction. Scores are divided by the number of experts and this applies to each paragraph whether in the test before or after the purpose of comparison and to know the impact of the experimental method.

3.7.1 Pre-test:

After the scale was constructed and the clarity of the clauses was made, the pre-test was conducted on 4/3/2018. The questionnaires were distributed to the trainers (24) trainers. Finding the scientific bases of the scale as well as to know the impact of the training curriculum by comparing it with the post-test.

3.7.5 Post-test:

The post-test was conducted on 10/4/2018 and the data was unloaded for the purpose of comparing it with the data of the pre-test and to know the impact of the training approach.

3.8 Statistical means:

The researcher used statistical bag (SPSS) for calculating the following: -

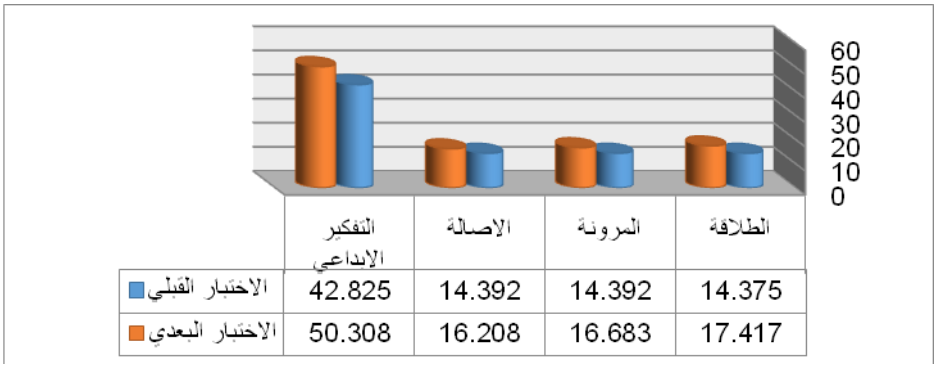
1. Arithmetic mean.
2. Standard deviation.
3. T-test of the two independent samples.

4. The equation of Alpha-Crow Nebach.
5. Square Ka 2.
6. Standard error.
7. Percentage.
8. The Spearman-Brown equation.
9. Simple Link (Pearson)

Chapter Four

4. Presentation, analysis, and discussion of the results:

4.1. Presentation and analysis of the pre- and post-tests of the control group in creative thinking.



	التفكير الإبداعي	الاصالة	المرونة	الطلاقة
الاختبار القبلي	42.825	14.392	14.392	14.375
الاختبار البعدي	50.308	16.208	16.683	17.417

Figure 1 shows the pre- and post-test of the first experimental group

Through the values calculated based on the level of significance, which came less than (0.05) to indicate the moral and to confirm the existence of significant differences between the pre and post-tests and in favor of the post-test.

4.2. Presentation and analysis of the tribal and dimensional tests of the experimental group in creative thinking

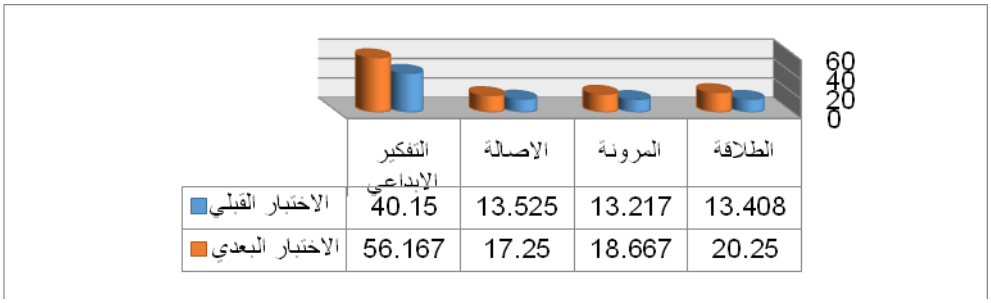


Figure 2. Illustrates the differences between the pre- and post-test of the second experimental group

Through the values calculated based on the level of significance, which came less than (0.05) to indicate the significance and to confirm the existence of significant differences between the pre and post-tests and in favor of the post-test.

4.3. Presentation and analysis of the post-tests between the first and second experimental groups in creative thinking:

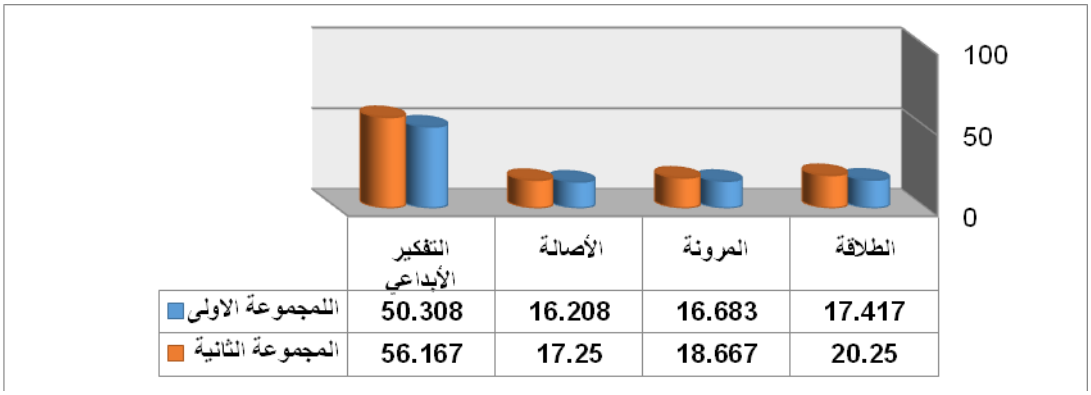


Figure (3) illustrates the differences in the post-test of the first and second groups in creative thinking

Through statistical treatments in the previous table of the components of creative thinking between the pre and post-tests of the first and second groups and through the value of T calculated and based on the significance level, which is less (0.05), this confirms the existence of significant differences between the post-tests and for the benefit of the second experimental group, In addition to the existence of indicators confirms that the differences in favor of the second experimental group is the arithmetic mean of each component of creative thinking.

4.4 Discussion of the results of the pre and post-tests of the control and experimental groups:

Through models (2, 1), we note that the level of creative thinking of experimental groups has been improved through the components represented by creative thinking (fluency, flexibility, and originality). When addressing the issue of coaches' events in sport, difficulty, and diagnosis they need to perform specialist work, they can make plans and alternatives easier, and use specific tools and criteria such as the innovation test, test preparation, in addition to the quality of the training on readiness. In the preparation of plans and programs for the diagnostic process should identify the areas of excellence and talent needed by the community in the training process in the field of sports more than others in the development of training capabilities for a group of athletes and develop a strategy through diagnosis on all details of the client's training with examples, videos and videos during the training process. The presentation has been installed objectively to focus on the process of creativity and form plans for the most important are: how you can meet the needs of the training process and how to identify them to develop their abilities and talents can even benefit from the correct H, and if we look at the skills and abilities used by the researcher in the program is an indicator of abilities Basic creative learning skills, training and independence in performance when implementing strategy and when reviewing your business vocabulary clear the quality vocabulary reader highlighted by the researcher as a means of comprehensive knowledge to understand and solve specific practical training problems. We also note that the strong desire to identify the names of dangerous objects and draw new ideas through lectures and sessions held by research groups and to respond to the acceptance of new ideas. He emphasized the study "Golan" where he stressed that the process of creativity and innovation include options and perception, originality, exploration, and meditation, has worked researcher with this concept and the training sessions reflect the process of searching for ideas and alternatives, diagnosis and find the names of training and focus on the process of teaching the tool, from here we find that there is an evolution in the components of creative thinking is the result of two inputs from the program used and thus refers to "Abdul Salam Ghaffar" "occurs in the light of the resulting product, where there is a new product where there is creativity, also stressed that one of the most important qualities of the experience of creative production" [7]. The most important conditions for determining the process Faqeer trainees Alabdaian is not the multiplicity of tools, but the multiplicity of situations in which access to information inhibition of the training period, and must take into account the expense of the appropriate

tools for the capabilities of trainees taking into account the mental time period for the application of tools and their validity and reliability. This is what the researcher was keen during the performance of the strategy of cognitive modeling, noting that by dealing with the toolkit and the progressive presentation of the subjects studied, has been adapted in terms of the level of easy handling to expand the perception of thinking with different proportions of the question and answer using different tools of data and thus the components of creative thinking grew He has samples of experimental research, and with the support of (Fahim Mustafa) "the ability to think creative is not impossible, because the originality of thought stemmed from the ability of the individual to prepare what comes out of the ideas of facts in a new context of relationships, so think of creativity that can benefit His condition comes to two principles: the desire and the need to possess to come up with new ideas - a problem or difficulty suitable to their abilities need to be solved. If we are able to consult with the learner's motives, the willingness is commensurate with the ability of information, and to train them to use it, and thus we can raise our willingness to creative thinking. " [8]. Returning to the computational circles achieved by the components of creative thinking (fluency - flexibility - thinking) for students in the tables attached, we find differences tend to fluency and then flexibility and then followed by the order of originality, the researcher attributes this to the concepts of components of creative thinking where we find that fluency is characterized by some general, Therefore it requires generating a large number of ideas compared to others although they lead to a good understanding of T information. Thus, the researcher finds that media values are more computational in the mind of the relatively less fluent components of others (flexibility and originality) where ideas are scarce and approach the familiar components. This is evidenced by a series of studies conducted by researchers such as the study (Mary girl Suleiman bin Murad) [9], on the reality of the practice of Islamic education methods for teachers of creative thinking methods two show that the fluency component was more effective than other components followed by flexibility And authenticity. As well as the study of the researcher (Nada Shawqi Hamid Tamimi) [10]. The researcher concluded during her study for middle school students that innovative thinking was acceptable to the research sample and showed a variation in the proportions of components of creative thinking respectively (fluency - flexibility - originality), and when focusing on the components Data of creative thinking in the questionnaire, we note that the level and nature of the questions addressed in the paragraphs of the questionnaire and special fluency are fluent and intellectual. Sometimes each other, since fluency is an essential element to reflect divergence, which is the essence of thinking and creativity, which refers to

the concept of an individual's ability to produce as many responses to imams about the problem, so paragraphs (2, 4, 6, 12, 16, 21) refers to this concept and motivates the trainer to produce as many responses as possible, supported by (Fathi Zayat) by reference to the terms of intellectual fluency and trade union fluency "intellectual fluency" expresses the varied production of units of meanings and indicates the ability to generate as many ideas as possible In response to a situation, problem or exciting, it is the production of many appropriate ideas in the meaning of the idea .. And trade union fluency expresses the differentiated production of meanings relationships in the model of mental formation and refers to the ability to produce as many relationships or interconnected. Or appropriate consequences in the sense of the idea "[11] note from the tables that flexibility was In terms of second-hand accounts this is one of the natural thingsBecause flexibility represents changing patterns based on ideas of a new sense of the ability of another person to change their perception of mental objects or multiple and different situations, while the test is fundamental to the ability of fluency, which is how the ideas and interconnected t The basic test of flexibility capabilities is the extent of the diversity of these ideas and the spacing of any distant To test any characterization of responses or ideas to characteristics of how diversity and variance are observed, therefore note the flexibility clauses in the questionnaire format (1, 11, 14, 15, 18, 22). Refers to (Abdel Moneim Hefni) to "judge a measure as new or original must be judged by the percentage of a particular area or frame of reference, and a child who comes with unprecedented behavior may be creative for his children, but not the principle if measured To achieve adulthood, as well as what a person may authorize in a new and real society may be in another society [12]. measured by the degree of“ authenticity ”: how the screen is displayed to mention the ability of answers is common in the group you belong to, and the less you The statistical frequency of an idea increases the degree of originality and vice versa, meaning that the more frequent the statistical idea. The degree of authenticity of the individual said, "[13]. The researcher believes that it makes sense that these differences between the components of thinking seem creative by supporting the theory of work that supports the view of "Guildford"and the most important points that came in theoretical work in this area," thinking that Creativity incorrect thinking is divergent, and vice versa, that is, divergent thinking does not necessarily think of creativity, which means that fluency, flexibility, and originality, where divergent processes play a key role in thinking about the creative issue and meant fluently stems from responses associated with the quantitative specified in the light of the number of such responses or Release speed, unite D with qualitative flexibility and dependence on the diversity of these responses, either

originality qualitatively also in the light of the scarcity of responses, and the lack of response of the faithful "(citing: Ibtisam Mohammed Hassan Mamlouh) [14].

5.4 Discuss subsequent testing between control and experimental groups

Through the follow-up model (3) to calculate and value the media t it is clear that the creative thinking of the second experimental sample group is superior to its first counterpart and also shows that the level discussed in the previous tables of components of creative thinking (fluency - flexibility - originality) in order to have been the same in the same model of subsequent tests and to achieve the strategy used for the target must be the qualifications of the trainee appropriate to the nature of this strategy, and therefore included the training process in more than the way the trainer and management (researcher and training group) responsible for the implementation of the training process. In order for the training to take the appropriate amount in achieving its objectives, the researcher and the trainer of the program must have conviction and faith first and adopt the correct methodology in estimating the training needs and calculate them correctly in the training process. Second, use the appropriate training methods in the training course by the training center, which is often the third implementing agency, and thus find that the training activity is practically distributed between the institution and the training center. The higher the practice of perfection in the role of each party to its role, and expand opportunities to achieve training objectives, so that the researcher relies on a group of trainers from the Ph.D. holders to take lectures on the researcher samples and thus the enthusiasm of this course by the trainees, the question must be answered by in this Connection, what made creative thinking so clear during the training sessions? The answer cannot be available only to the foundations and principles of supportive development, and therefore a skill-based researcher represents the special program of creativity Curt, which is ten skills in addition to a set of factors addressed to them in the discussion of tables (15, 14) and when going into the content of these skills deeper, we find that it affects the ability of the trainee to change his level of thinking from the simple level to the advanced level of complexity which is not negative attitude but a positive situation and so gave Kurt skills a group of impressions of the trainees will mention the impact of this effect without mentioning the name of this skill That touched To the researcher when implementing the program. The researcher points out that one of the most important rules that support the creative thinking of this study is to provide a suitable environment, ie provide a climate consistent with the trainees according to their preferences and desires and tools provided to the trainee with a set of mental data, the researcher worked with program managers to explain

the vocabulary and skills of Kurt in a way Process with intellectual data, which contributed to the provision of this concept they have through the logistics supply of the display screen, stationery and recording ideas and debate, as I mentioned these skills to respect the art of new ideas, it seemed to have the skill of random input and discuss the idea of acceptance or not accepting. Through the idea of dialogue and the building of trainees began individualized originated has the principle of in-depth access and knowledge of which support creative thinking more enlightened ideas and creative ideas that re-study in the mind of the Creator and not stand at a certain point of thinking and not only certain limits of ideas that wander in the mind. These skills also contributed to the selection of appropriate ideas through the prevailing idea - the main idea means that the organizational process of the ideas of errors because it leads to what may be called mental impurities adopted by the researcher in the skill to remove impurities and important things that appeared in the sample of experimental research is the lack of fear of results, The person who should be characteristic of and not acquiesce to the principle of fear and researcher believes that the principle of interconnection and skill through the idea of putting things separately with each other to produce him the greater the value cultivated in the principle of initiative of the individual trainee rather than awe and void.

5.1 Conclusions

1- The adoption of the strategy of cognitive modeling in the teaching of sports training material had a positive role and effect in raising the level of academic achievement of students.
2- Adopting the strategy of cognitive modeling in the teaching of sports training material had a positive impact on expanding their creative thinking.

5.2 Recommendations:

1. The need to emphasize the importance of using this strategy in the teaching of sports training because of the positive impact in raising their ideas.
2. The need to involve teachers in development courses on how to use this strategy and use.
3. Conducting similar studies from other subjects and stages of this strategy.

References

[1] The IQ test raft test was applied to matrices to measure intelligence and the matrix consists of 60 paragraphs divided into five groups and each group consists of 12 matrices classified from easy to difficult with accuracy of observation to reach the perception measurement PR related to abstract mental aspects using T-test for two independent samples to randomly determine differences between average IQ and outcome between them.

[2] Camels. Essential of. Measuring education 2 nd. Release. Newryk, Prinz-Hill, 1972, 392

[3] Ahmad Suleiman Odeh: Measurement and Evaluation of the Educational Process, Irbid, Al-Amal for Publishing and Distribution, 1998, p. 335.

[4] Sahara Abdullah: Building a self-management for primary school pupils, Master Thesis, College of Education, Ibn Rushd, Baghdad, p. 103.

[5] Cron back.LG: Essen Tail of a psychology test. New York, Harper bro theirs, 1984, p: 121.

[6] Mustafa Mahmoud Imam et al: Evaluation and Measurement, Ministry of Higher Education and Scientific Research, Baghdad, 1990, p. 40.

[7] Abdulsalam Abdul Ghaffar: The T over the mind and innovation, Cairo, Arab Renaissance House for Publishing, 1971, p. 53.

[8] Fahim Mustafa: the development of excellence and creativity and its relationship to the use of school libraries, Dar al-Fikr al-Arabi, Cairo, i, 1, 2009, p. 131-132.

[9] Mariam bint Sulaiman bin Murad al-Balushi: The reality of the practice of Islamic education professors to develop creative thinking in the teaching of the second session of basic education students in the Sultanate of Oman, unpublished master thesis, University of supplies, 2010, p. 82.

[10] Nada Shawqi Hameed Al-Tamimi: Innovative Thinking among Outstanding Students and Accustomed to the Preparatory Stage, College of Education for Girls, University of Baghdad, Journal of Psychological Sciences, No. (19), p.

[11] Fathi Zayat: The Cognitive Basis of Mental Training and Information Processing, University Press, Egypt, 2006, p. 509.

[12] Abdel Moneim Hefni: Encyclopedia of Psychology - Psychology in our daily lives, the psychology of creativity, i 1, Madbouli Library, 1995, pp. 29-30.

[13] Sayed Mohamed Khairallah: Testing the ability to think creatively, the first, Anglo-Egyptian, Cairo, 1981, p. 13.

[14] Ibtisam Mohamed Hassan Selmawy: Methods of Creating Creativity among Primary Education Students in Egypt, Journal of Educational Sciences, October 1998, p. 193.

[15] Ibtisam Mohamed Hassan El-Salhawy: Methods of Educational Innovation for Primary Education Students in Egypt, Journal of Educational Sciences, October 1998.

[16] Ahmad Suleiman Odeh: Measurement and Evaluation of the Educational Process, Irbid, Al-Amal for Publishing and Distribution, 1998

[17] Sahara Abdullah: Building a self-scale for primary students, Master Thesis, College of Education, Ibn Rushd, Baghdad.

[18] Sayed Mohamed Khairallah: Test of the ability to think creatively, the first, Anglo-Egyptian, Cairo, 1981

[19] Abdel Salam Abdel Ghaffar: Excellence and Mental Creativity, Cairo, Dar Al-Nahda Al-Arabiya, 1971.

[20] Abdel Moneim Hefni: The Encyclopedia of Psychology - Psychology in our daily lives, Psychology of Creativity, i 1, Madbouly Library, 1995.

[21] Fathi El-Zayat: The Cognitive Basics of Mental Training and Information Processing, University Press, Egypt, 2006.

[22] Fahim Mustafa: Development of excellence and creativity and their relationship with school libraries, Dar al-Fikr al-Arabi, Cairo, the first, 2009.

[23] Mariam bint Sulaiman bin Murad Al-Balushi: The reality of the practice of Islamic education professors to develop creative thinking in teaching students of the second stage of basic education in the Sultanate of Oman, unpublished master thesis, Minia University, 2010.

[24] Mustafa Mahmoud Imam et al: Evaluation and Measurement, Ministry of Higher Education and Scientific Research, Baghdad, 1990.

[25] Nada Shawqi Hamed Al-Tamimi: Creative thinking among the outstanding and aggressive students in the preparatory stage, College of Education for Girls, University of Baghdad, Journal of Psychological Sciences, No. (19).

[26] Camels EssenTalal of. Educational measurement 2 nd. Release. New York, Prentice Hill, 1972.

[27] Cron back.LG: Essen Tail of psychological testing. New York, Harper Pro, 1984.

The impact of special exercises on developing kinetic compatibility and fitness and its reflection on the accuracy of performing serving and sky ball serving" star trek" skills in volleyball

Tarik Dhayea Mohammed[1], Mohammed Dhayea Mohammed[2], Rajaa abdul kareem hamed[3]

1. Samarra University - Faculty of Physical Educationand Sports Sciences
m_sport201047@yahoo.comdr.tariqazawy@gmail.com
2. Tikrit University - Faculty of Physical Education and Sports Science
3. Diyala University,Faculty of Physical Education and Sports Science
Rajasport91@dmail.com

Abstract

Volleyball is one of the collective sports that depend greatly on the spiker's abilities to master the kinetic and basic skills. It is a sport that requires a great deal of compatibility and fitness to acquire the perfect and elaborate kinetic skills with high accuracy for quickly, accurately and smoothly performance in order to carry out the required kinetic duty.

The research aimed to:

-Identify the players' kinetic compatibility and fitness level and their reflection on the performance accuracy of serving and star trek skills in volleyball.

-Preparing special exercises for improving the kinetic compatibility and fitness and their reflection on the performance accuracy of serving and star trek skills in volleyball.

-Identify the impacts of the special exercises on improving the kinetic compatibility and fitness and their reflection on the performance accuracy of serving and star trek skills in volleyball.

The most significant conclusions that the research figured out are:

1-There are significant differences between the pre- and post tests for the research groups in all research variables in favor of the post tests.

2- There are significant differences between the post tests for the research groups in all research variables in favor of the experimental group.

Key Words: special exercises, kinetic compatibility, fitness, star trek, volleyball

1- Introduction

Volleyball is characterized by interrelation of its basic skills. The kinetic abilities play an important role in mastering and improving the basic skills in many games and sports events such as volleyball since it's one of the sports that requires many physical and kinetic skills, especially the kinetic compatibility and fitness, so exercising should work on improving the physical, kinetic and skillful abilities in accordance with the requirements of the skillful performance. This was affirmed by (**Maha Mohammed Al-Hagrassy, 2007: 1)"** Sports training contributes significantly in improving general and special abilities required by practicing sports activity by good planning of its programs". "This is because it's characterized by fast rhythms, following-up and continuous exchanges between offensive and defensive skills", as well as, performing fast defensive and offensive movements that rely on fitness and neuromuscular compatibility**."(Mohammed Abdallah Mahibis, 2012: 32).** Any failure or weakness in performing a skill results in imperfection in performing the following skills, and since some skills are characterized by rapid performance, surprise and quick change of body position, therefore players have to perform all skills perfectly and very quickly. As volleyball spikers are characterized by height of body and Macrocolia, which results in the height of the body weight center" center of gravity" from the ground, which requires greater effort in achieving a high level of compatibility and fitness. The importance of compatibility in volleyball results from its prominent role in winning. Compatibility in volleyball is a basic technique, as well as, the psychological and kinetic requirements reflected on the player's technique level. This is consistent with the point of view of **(Abo El-Ela Ahmed Abdel- Fattah, 1997:205)"** the ability to score a point through fast and accurate kinetic performance with the least possible effort**." (Nagah Mahdi Shalash& Mazen Abdul Hadi, 2010:71)** identifies it as" the individual's ability to move two or more different muscles groups in two different directions at the same time". We can note the importance of the muscular and kinetic compatibility through observing the player's ability to keep balance, bearing, fitness, adjusting the kinetic movements inside the court. This was confirmed by (Robert N. Singer: R.1982. P: 199)" it's the individual's ability to control different parts of the body involved in performing a specific kinetic duty and connects these parts through an effective, single and smooth movement to perform this kinetic duty". This is consistent with the opinion of (**Wajih Mahjoub, 1989: 27)"** it's the individual's ability to control his muscles individually or jointly as the activity requires". Fitness also is considered one of the important kinetic qualities in most sports. This was affirmed by(**Mohammed Hassan Allawi& Mohammed Nasruddin Radwan, 2001**: 236)" fitness is one of the most significant kinetic features in the sports activities that require changing the body direction or changing its position in air or on the ground, or starting and stopping quickly, or trying to incorporate many kinetic skills within one frame, or kinetic apraxia within changeable and different conditions with great compatibility, accuracy and speed"(**Winnick P. Short X, 1985, p: 86)** has identified it as" the ability to change quickly the body direction

or any part of it; it's characterized by speed, capacity strength characterized by speed, and compatibility; therefore, it's performing a specific and particular duty". Fitness can be improved by performing kinetic skills and trying to connect the skills parts altogether, this is consistent with the opinion of(**Kamal Jameel Al-Rabadi, 2004:101**)" it's the player's ability to increase performing the kinetic skills and the ability to reconcile between them, which helps so much in improving fitness". The research problem lies in the disparity in the level of kinetic compatibility, fitness, and the accuracy of serving and star trek skills for the spikers within the match, that's because they're basic and important skills in forming any offensive on the opposing team, which motivates the researchers to find a solution for this problem by depending on the possibility of studying the improving of kinetic compatibility and fitness, and their reflections on performing accurately the serving and star trek skills in volleyball. So the researchers attempted to study the problem by preparing special exercises for improving the kinetic compatibility and fitness, and their reflections on performing accurately the serving and star trek skills in volleyball.

The research aimed to:

-Identify the players' levels in kinetic compatibility and fitness, and their reflections on performing accurately the serving and star trek skills in volleyball.

- Preparing special exercises for improving the kinetic compatibility and fitness and their reflection on the performance accuracy of serving and star trek skills in volleyball.

-Identify the impacts of the special exercises on improving the kinetic compatibility and fitness and their reflection on the performance accuracy of serving and star trek skills in volleyball.

2.1. Research Approach

The researchers used the experimental approach with two" equivalent- groups" technique and the correlation between them as it fits the research problem.

2.2 The Research Sample

The process of selecting the sample is" a survey of a specific part of the original community, then generalizing the results on the whole community**"(Mohammed Hassan Allawi& Mohammed Nasruddin Radwan, 2000: 2013)**. The sample community was the advanced players at Al-Dhuluiya sports club in the season2018/2019. They were (16) players, and the sample contains(12) players selected randomly;(4) players were excluded for performing the exploratory experiment, thus thepercentage of the research sample was(75%).They were divided into two groups; the control and experimental groups, according to the playing position of the player by(6) players into each group.

3.3 Means, Devices and Tools:

Arabic and foreign references- tests and scale- stationery- Electronic computer-(8) legal balls- measuring tape- legal court-(2) Fox whistles.

2.4 The research used tests:

After reviewing the sources and references, the researchers used the following tests:

- The numbered circles test. (**Mohammed Sobhi Hassanein, 1995:415)**

-Fitness test **(Hassanien, 1987: 351)**

-Measuring the serving skills accuracy test **(Marwan Abd-Al-Hamid, 2001:296)**

-The straight star trek skill test **(Ali Salloum Jawad Al-Hakim, 2008:198**)

2-5 Procedures of the field research:

2.5.1 The exploratory experiment:

The exploratory experiment was carried out on Wednesday ***(17/7/2019)*** on (4) players of Al-Dhuluiya sports club; they were selected out of the main research sample

2.5.2 The pre- Tests

The researchers carried out the pre- tests on the research sample on19-20/7/2019 within the same conditions related to the tests and the way of carrying out the tests for trying to have the same conditions during the post- tests.

2.6 The training Approach:

The researchers prepared special exercises(for special training, see appendix 1), which aim to improve the kinetic compatibility and fitness and their reflection on the performance accuracy of serving and star trek skills in volleyball within a training period about (8) weeks, on (Saturdays, Sundays, Wednesdays) of every week, at the rate of(3) training units per week, the total number of training units was (24) units, and the time of exercise application ranged between(55-65) minutes of the training unit time. The researchers used a ripple of weights(1-2), which means a light weight for a day followed by two days of heavy weight, as well as, the use of high-intensity interval training method. The experimental group used the special exercises approach prepared by researchers, and the control group used the method used by the team coach.

3.6.3 The post- tests

The sample post- tests were carried out on the sample members and on the research groups on 22-23/9/2019 just as the pre- test that was carried out.

3.7 The Statistical Means

The statistical bag" ***SPSS***" was adopted in figuring out the results, the percentage, arithmetic mean, standard deviation,(t) law for symmetric samples,(t) law for asymmetric samples.

3. Introducing, analyzing, and discussing the results:

3.1. Introducing and analyzing the results of the post- tests for the research groups, the control and the experimental, within the research variables in volleyball

3.1.1. Introducing and analyzing the results of the research variables tests in volleyball for the control group as shown in table (1)

Table (1)

Shows the results of the pre- and post tests for the control group in compatibility, fitness and the accuracy of serving and star trek skills in volleyball

Statistical significance	degree (Sig)	**Calculated(t)**	Post test		Pre- test		Measuring Unit	Tests
			n	h	n	h		
(*) significant	0.049	2.594	0.327	8.575	0.551	9.196	Second	*compatibility*
significant	0.002	5.675	0.345	6.531	0.487	7.065	Second	*fitness*
significant	0.002	5.966	0.816	12.333	1.048	10.500	Degree	*accuracy of serving*
significant	0.004	5.000	0.836	11.500	0.752	9.833	Degree	*accuracy of star trek*

(*) *significant when the significance level< (0.05)*

4.2 Introducing and analyzing the results of the research variables tests in volleyball for the experimental group as shown in table (2)

Table (2)

Shows the results of the pre- and post tests for the experimental group in compatibility, fitness and the accuracy of serving and star trek skills in volleyball

Statistical significance	degree (Sig)	**Calculated(t)**	Post test		Pre- test		Measuring Unit	Tests
			n	h	n	h		
(*) significant	0.001	3.894	0.544	7.800	0.462	8.600	Second	*compatibility*
significant	0.004	4.940	0.219	5.868	0.539	7.088	Second	*fitness*
significant	0.000	7.81	0.547	13.500	0.752	10.166	Degree	*accuracy of serving*
significant	0.003	5.270	0.816	13.333	1.169	10.166	Degree	*accuracy of star trek*

(*) *significant when the significance level< (0.05)*

3.3 ***Introducing and analyzing the results of the post- tests for the control and experimental group in the research variables in volleyball as shown in table (3)***

Table (3)

Shows the results of the post- tests for the control and experimental group in compatibility, fitness and the accuracy of serving and star trek skills in volleyball

Statistical significance	degree (Sig)	**Calculated(t)**	Post test		Pre- test		Measuring Unit	tests
			n	h	n	h		
(*) significant	0.001	2.989	0.544	7.800	0.327	8.575	Second	*compatibility*
significant	0.003	3.971	0.219	5.868	0.345	6.531	Second	*fitness*
significant	0.001	2.907	0.547	13.500	0.816	12.333	Degree	*accuracy of serving*

significant	0.003	3.841	0.816	13.333	0.836	11.500	Degree	*accuracy of star trek*

Table (3) shows the values of the arithmetic mean, standard deviation the calculated (t) value, (sig) degree of the post- tests for the research groups in variables of compatibility, fitness and the accuracy of serving and star trek skills in volleyball, where the results indicate that there are significant differences between the results of the post tests for research sample in favor of the experimental group.

3.6 Discussing the post tests results for the research groups, the control and the experimental, in the under- study variables in volleyball

Through what has been shown in table (3) of the post tests results for the research groups, the control and experimental, which indicate that there are significant differences in favor of the experimental group in all research variables. The researchers attribute the significant differences to the perfect use of the special exercises prepared by the researcher who depended on tools, means that fit the players' levels in the experimental group, which adopted the appropriate duplications and intensities. This is consistent with what (**Schmidt, A. Richard, 2000, p: 206**) referred to" the coaches should encourage the learners to perform as many attempts as possible", as well as, diversity in using the compound exercises in the training units, considering the appropriate periods for break between the exercises and the exercise groups according to the volleyball character. This was assured by (Robert N, Singer, 1982:227)" the kinetic skill can't be achieved without an acceptable level of special physical abilities." This is consistent with what (**Essam Abdel Khalek, 2005:127**) has mentioned" exercises warm up the individual to practice the sports activity and improve the kinetic abilities required for this activity till the individual's performance of kinetic and tactical aspects improved.This has contributed in improving the players' levels as it involves exercises characterized by appropriate and various duplications. This was confirmed by (**Emad El-Din Fattah, 157 2001**) "using exercises is similar to the skill performance as it contributes significantly in improving the kinetic skills performance". This is consistent with the opinion of (**Mufti Ibrahim Hamada, 1994: 23**)" the players can perform the skill automatically by permanent duplication based on a correct and coherent scientific basis that are consistent with the player's levels and their ability to concentrate on the performance speed which has a great role in elevating the players' levels physically and skillfully.This is consistent with the opinion of (**Mohammed Abdel Dayem, 1985:136**)"the technical training programs organizedaccording to scientific basis, improve the physical and skillful levels of the players", as well as, using a training loads scientifically, has a great importance in improving the performance level. This is consistent with the opinion of (Faten Mohammed Rashid, 1999: 33)" selecting the appropriate exercises related to the physical abilities of the activity, contributes in elevating to the highest performance level"; rather than, graduating from the simple to the compound when performing the special exercises, helps in improving

this quality, as (Essam Abd Al-khaliq, 1999: 184) mentioned" The more fitness an individual has, the quickly his level improves".

4- Conclusions and Recommendations

4.1 The Conclusions:-

1- There are significant differences between the pre- and post- tests for the research groups in all the research variables in favor of the post- tests

2- Improving the kinetic abilities has a positive impact on improving the accuracy of the star trek skill in volleyball

3- Improving the kinetic abilities has a positive impact on improving the accuracy of the serving skill in volleyball

4.2 The Recommendations:-

1- Emphasize on volleyball spikers to pay attention to physical and skillful abilities.

2- Emphasize on the volleyball spikers to perform the physical and skillful tests to ensure the effectiveness of the used training approaches.

3- It's necessary to perform similar studies that are similar to other physical abilities and skills in volleyball.

Arabic and Foreign References:-

1-Abu El-Ela Ahmed Abdel-Fattah; Physiological bases of the sports Training, 1st edition (Cairo, Dar Al-Fikr Al-Arabi, 1997)

2-Nagah Mahdi Shalash and Mazen Abdul Hadi; Principles of kinetic learning, Najaf Ashraf, (Dar Diaa for printing and publication, 2010)

3-Wajih Mahjoub; Kinetic Learning, Mosul (Dar Al-Fikr For Printing and Publishing, 1989)

4-Kamal Jameel Al-Rabadi; Sports Training for the 21st Century, 1st edition (Amman, Ramallah Press, 2004)

5- Faten Mohammed Rashid; speed of kinetic response and explosive force of the muscles of the lower limbs and their relationship to some basic skills and some functional variables of volleyball players (Ph.D. thesis, College of Physical Education, University of Baghdad, 1999).

6-Essam Abdel-Khalek; sports training, 9 th edition, (Baghdad, Dar Al-Maaref 1999).

7- Essam Abdel-Khalek; sports training theories - applications, 12th edition, (Cairo, Mnshia Al-Maaref, 2005)

8-Ali Salloum Jawad al-Hakim: tests, measurement and statistics in the field of sports (Qadisiyah, University of Qadisiyah, 2008).

9- Emad El-Din Fattah: Planning and Scientific Bases for establishing and Preparing the collective Games, 1st edition, (Alexandria, 2001).

10-Mohamed Mahmoud Abdel Dayem, impacts of a proposed program on developing the basic skills of young people in basketball, Volume II, International Conference Research, High Levels Sport, Cairo, 1985.

11-Marwan Abdel Hamid, Scientific Encyclopedia of Volleyball, 1st edition (Amman, Al-Warraq Publishing and Distribution Foundation, 2001)

12-Mufti Ibrahim Hammad; new skillful and tactical preparing of the football player (Cairo, Dar al-Fikr al-Arabi, 1994)

13-Maha Mohamed El-Hegrassy; The Impact of a Proposed Training Program with Cross Training Method on Some Physical and Skills Abilities of Young Women in volleyball (PhD Thesis, Faculty of Physical Education, Minia University, 2007).

14-Mohammed Hassan Allawi and Mohammed Nasruddin Radwan; measurement in education and sports psychology (Cairo, Dar al-Fikr al-Arabi, 2000)

15- Mohammed Hassan Allawi and Mohammed Nasruddin Radwan; kinetic performance tests, 1st edition(Cairo, Dar al-Fikr al-Arabi, 2001)

16-Mohammed Sobhi Hassanein; Measurement and Evaluation in Physical and Sports Education, 3rd edition (Cairo, Dar Al-Fikr Al-Arabi, 1995)

17-Mohammed Abdallah Mahibis; the impact of an educational curriculum using sequential and random exercise in the development of kinetic compatibility and the development of the performance of skills of star trek and the block in volleyball for junior (Master Thesis, University of Basra, College of Physical Education, 2012).

18-- Schmidt, A. Richard Craig A.Wrisherg; Motor Learning and Performance; Second Edition; Human Kinetics 2000.

19--Singer, Robert N: Motor Learning and Human Performance, 3rd ED, New York ,Macmillan Publishing co , Inc..1982.

20--- Robert N. Singer: Motor Learning and Human performance Macmillan Publishing co. Inc.1982.

21-- Win nick P. Short X: Physical Fitness Testing Human Kinetics Publishers: 1985.

Appendix (1)

A Training Unit Model

The number of the players: (6) players

Training type: periodical and high- intensive

The training aim: improving the compatibility- fitness

The Place: Al- Dhuluiya sports club

The total time of the training unit: 52 minutes

The desired intensity %	Breaks between		Number of groups	duplication	Training Maximum time	The exercise's purpose
	groups	duplications				
%80	70 s	36 s	2	6	18 s	- The player stands in front of the block at the distance of (4 m), behind the drawn line on the ground, the player throws the ballby handssuccessively and receive it after bouncing the block.
	70 s	36 s	2	6	18 s	- Standing at the serving line, holding the ball and dribbling it upwards and downwards by hands.
	80 s	40 s	2	6	20 s	- Running forwards and backwards between two lines, the distance between them is (5m).
	80 s	40 s	2	6	20 s	Holding the ball from the top, then holding it and walking till crossing the net, then running to the end of the court

New Merging Zone – Flow Injection System for Spectrophotometric Determination of Amoxicillin and Levofloxacin

Khdeeja Jabbar Ali [a] and Esraa Rasul Radhi[a,]*

[a] Chemistry Department, Education for Girls Faculty, Kufa University, Kufa, Iraq

* The corresponding author

Esraa Rasul Radhi: E-mail address: esraar.falfali@student.uokufa.edu.iq

Abstract

Two novel, simple designs for implementing merging zone in flow injection analysis are suggested for spectrophotometric determination of amoxicillin trihydrate (AMOX) and levofloxacin hemihydrate (LF) by Bromocresol Green (BCG)based on ion-pair complex formation at 615, 617 nm for AMOX, LF respectively. Calibration curves linearity was over the concentration ranges of1-10, 0.5-20 μg ml^{-1}, for AMOX, LF respectively. Limits of detection and quantification,specific and molar absorption coefficients,sandal sensitivity and correlation coefficients were calculated. The effect of various experimental parameters for two systems was studied. The designed systems were applied successfully for amoxicillin and levofloxacin quantity determination in pharmaceutical formulations.

Key words: Flow Injection analysis, Amoxicillin, Levofloxacin, Determination, Bromocresol Green.

1. Introduction

Amoxicillin is a beta-lactam antibiotic has a large strength of absorption subsequent oral administration with an availability to be around 95%, approximately [1], its chemical structure is (2S,5R,6R)- 6-{[(2R)-2-amino- 2-(4-hydroxyphenyl)- acetyl]amino}- 3,3-dimethyl- 7-oxo- 4-thia- 1-azabicyclo[3.2.0] heptane- 2-carboxylic acid and its molecular formula is C16H19N3O5S [2]. Amoxicillin is usually used in medicine for the therapy of bacterial infections which caused by Gram-negative and Gram-positive bacteria with a good permeation into tissues [3]. Diverse analytical methods have been utilized for the estimation of AMOX in pure and pharmaceutical formulations like spectrophotometry [4, 5], high performance liquid chromatography [6, 7], flourimetric [8, 9], flow injection analysis [10, 11], capillary electrophoresis [12, 13], chemiluminescence [14, 15]. Levofloxacin (LF) has an efficient antibacterial action and low recurrence of pernicious effects in oral administration case [16], its chemical structure is [(S)-9-fluoro-2, 3-dihydro-3-methyl-10-(4-methyl)-1-piperazinyl)-7-oxo-7H-pyrido [1, 2, 3-de]-1, 4-benzooxazine-6-carboxylic acid] [17].Levofloxacin usually used in gastrointestinal tracts, genitourinary and soft-tissue infections [18]. Several techniques have been reported for the quantity estimation of LF like high performance liquid chromatography [19, 20], spectrophotometric [21, 22], electrochemical [23, 24], electrophoretic [25, 26], spectrofluorimetric [27, 28], high performance thin layer chromatography [29, 30]. The target of the present research was to adapt the formation of ion pair complex between antibiotics under study with Bromocresol Green (BCG) as a reagent to a system of flow injection analysis with merging zones procedure without the requirement for a concentrated buffers to spectrophotometric determine of these drugs in pure and pharmaceutical preparations. The two designed flow systems with merging zones configuration were very stable, highly decreasing for consumption of the reagent and drugs and reduction the analysis time. The suggested method allows the analysis to be done for 102 and 133 samples per hour for AMOX and LF, respectively with relative standard deviations less than 1%.

2. Experimental

2.1. Chemicals and reagent

Analytical grade solvents and chemicals were used in this work. Amoxicillin trihydrate and levofloxacin hemihydrate pharmaceutical pure forms were kindly provided from the state company for drug industries and medical appliance, SDI, Samaraa, Iraq. All Pharmaceutical formulations were purchased from local markets.

2.2. Instruments

Absorbance measurements were implementing using Biochrom Libra S60 double beam spectrophotometer, samples weighing was implementing using Ohaus PA214 Pioneer Analytical Balance, pH measuring was performed using Oakton 2100 Series pH/mV/Ion/°C/°F Meter. The flow injection system, which used for the antibiotics determination, is shown in Fig. 1, it composed of an ismatec peristaltic pump employed to drive the carrier stream solution, the sample and reagent solutions were loaded and injected via a lab – made valve (consisting of four secondary valves each one with three exits), Teflon pipes with 1mm i. d. were used as loading loops at the valve, mixing coil and flow line for the carrier stream. The resulting peak was obtained by using a UV-Visible detector (OPTIMA SP300), connected to the chart recorder (KOMPENSOGRAPH C1032).

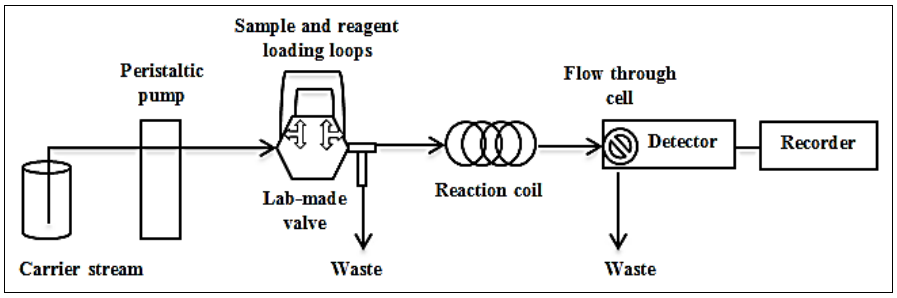


Fig. 1: Schematic diagram of the designed flow system

2.3. Standard and working solutions preparation

100 μg ml^{-1} standard solutions of amoxicillin trihydrate , levofloxacin hemihydrate were prepared by dissolving 0.01 g of each in sufficient (1 $\times 10^{-4}$ M) standardized HCl solution for AMOX and distilled water for LF, then diluting with the same solvent to 100 ml. Toprepare the working solutions, convenient dilution of the standard solutions with the same solvent was implemented.

The 1000 μg ml^{-1}standard solution of Bromocresol Green (BCG) was obtained by dissolving 0.1 g of BCG in sufficient 96% ethanol, then diluting with the same solvent to 100 ml. To prepare the working solutions, convenient dilution of the standard solutions with the same solvent was implemented.

2.6. Maximum absorption wavelength Determination

UV-Vis spectra of amoxicillin trihydrate, levofloxacin hemihydrate complexes against their blank solutions were obtained. As shown in Fig.2AMOX, LF complexes have a maximum absorption at 615, 617 nm, respectively.

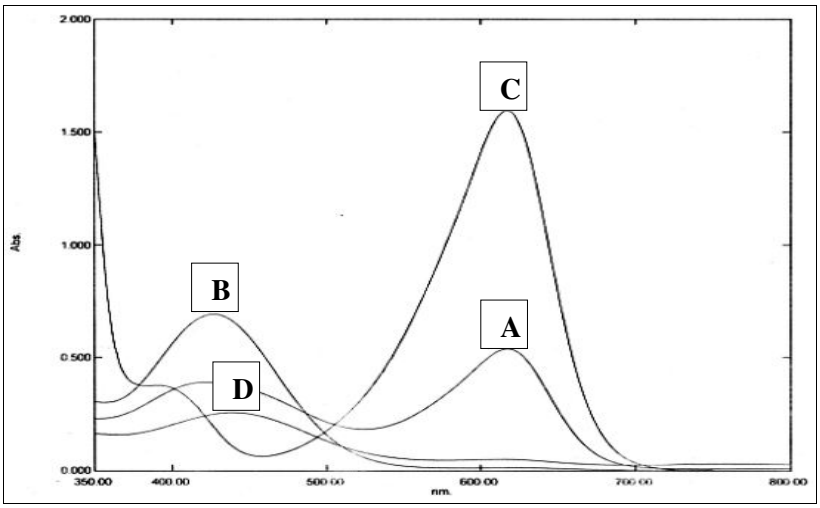


Fig. 2:UV-Vis spectrum for: A- AMOX ion-pair complex at 615nm, B- AMOX blank in acidic medium (pH=3.3), C- LF ion-pair complex at 617 nm, D- LF blank in neutral medium (pH=6).

2.4. General Procedure for calibration

A series of AMOX and LF working solutions with various concentrations have been prepared by convenient dilution of the standard solutions. drugs and BCG working solutions were loaded on the designed valve as zone sampling, then the carrier stream of (1×10^{-4} M) HCl solution for AMOX or distilled water for LF was pumped at appropriate flow rate allowing these zones to get together and mixed well with each other within the reaction coil as it move towards the detector which measured its absorption at 615 nm, 617nm for AMOX, LF respectively, the absorption value represented as a peak by the connected recorder, as shown in Fig. 1.Calibration plots were obtained by plotting the absorbance peak height against the drugs concentration.

2.5. Analysis of AMOX and LF in Pharmaceutical formulations

The 100 μg ml^{-1} standard solution of tablets, capsules and suspension was obtained bydissolving aconvenient weight of the smash powder of 10 tablets, content of 10 capsules and appropriate volume of suspension solutionin sufficient (1×10^{-4} M) HCl solution, distilled water for AMOX,LF respectively,followed by filtering the resulting solution with Whatman No. 1 filter paperthen diluting with the same solvent to 100 ml. To prepare the working solutions, convenient dilution of the standard solutions with the same solvent was implemented; same procedure was carried out as explained under the general procedure for calibration.

3. Results and Discussion

3.1. Experimental variables effect

3.1.1. Effect of flow rate

The effect of the carrier stream flow rate has been studied for amoxicillin and levofloxacin, in order to get the highest absorption peak over the range of 0.8 - 10.2 ml $min.^{-1}$.The results manifested that, with 10μg ml^{-1}AMOX, LF when the concentration of BCG was 50μg ml^{-1},the height of the absorption peak continued to increase with the flow rate increasing up to7.8,9.1ml $min.^{-1}$ for AMOX, LF, respectively then starting to decrease as shown in Fig. 3.

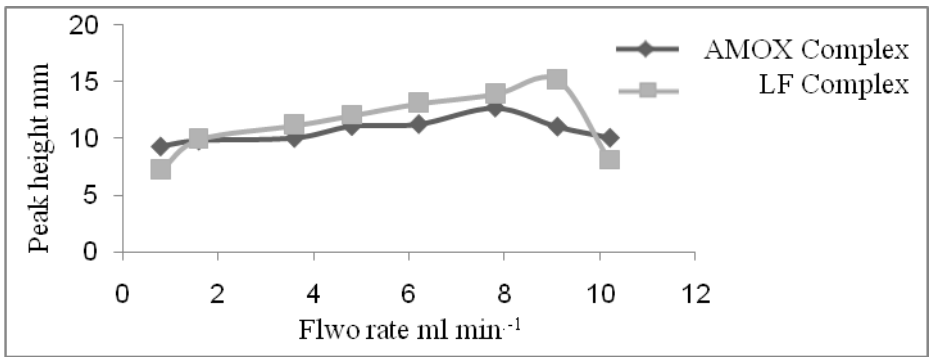


Fig. 3:Effect of flow rate on complexes formation

3. 1. 2. Effect of reaction coil length

The influence of the reaction coil length on the absorption peak height has been tested in the range of 10 to60 cm for AMOX and 10 to 40 cm for LF. The results manifested that, with10μg ml^{-1}AMOX, FL when the concentration of BCG was at 50μg ml^{-1}; the maximum increase in the peak height was obtained as the length of the reaction coil increased up to 50, 20 cm for AMOX and LF, respectively. Above these lengths, the peak height decreased as shown in Fig. 4. Therefore, these lengths were choosing as being the optimum.

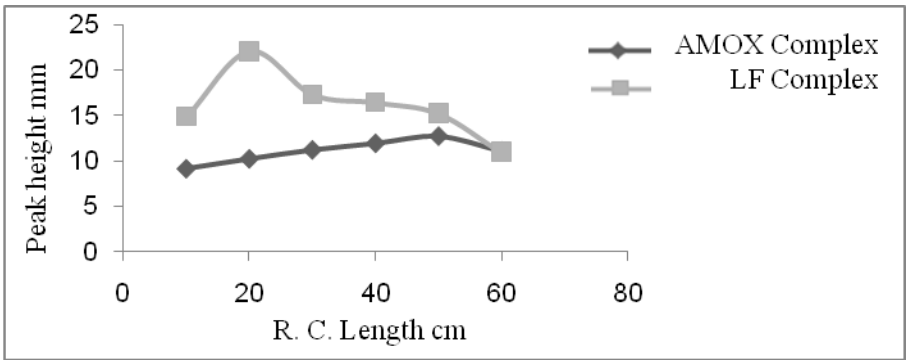


Fig. 4: Effect of reaction coil lengthon complexes formation

3. 1. 3. Effect of BCG concentration

The effect of 25 – 200 μg ml^{-1} bromocresol green on the absorption peak height has been examined for AMOX and LF. It has been shown that, with 10μg ml^{-1} AMOX, FL, the maximum increase in the peak height was at concentration 50 μg ml^{-1} for both drugs. Above that concentration, the peak height decreased as shown in Fig. 5. For this, 50 μg ml^{-1} of the BCG concentration was selected as the best reagent concentration in subsequent experiments.

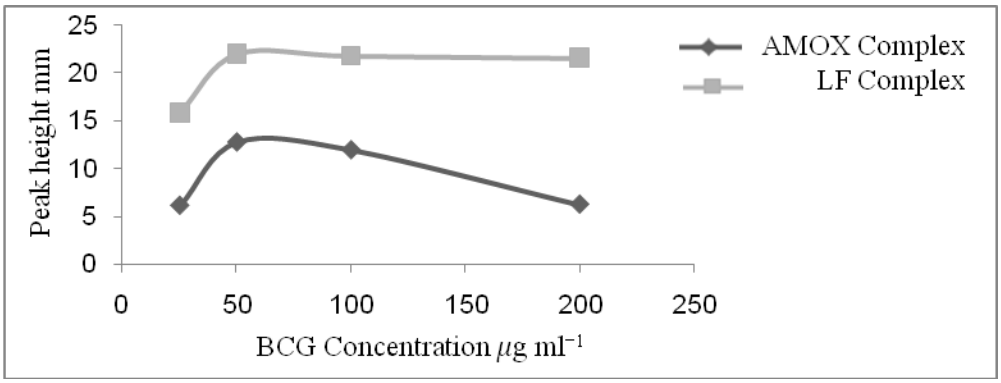


Fig. 5: Effect of BCG concentration on complexes formation

3. 1. 4. BCG solution volume

The influence of BCG solution volume on the absorption peak height has been tested in the range of 78.57 to 314.29μl, 78.57 to157.14 μl for AMOX, LF, respectively. It was found that, with 10μg ml^{-1} AMOX, LF, the highest peak was obtained at 157.14 and 78.57μlfor the AMOX and LF, respectively. Therefore these volumes were choosing in the following experiments.

3. 1. 5 the Antibiotic solution volume

The influence of antibiotic solutions volume on the absorption peak height has been studied in order to obtain the highest peak height within the range of 117.86 to 314.29 μl. It was found that,with 10μg ml^{-1} AMOX, FL,the best peak height was at 235.71 and 157.14 μl for AMOX and LF, respectively. So these volumes were selected for the following experiments.

3. 1. 6. Acid type as a solvent for AMOX

It was found that the absorption peak height of AMOX complex was higher in an acidic medium than in a basic or neutral medium. Hydrochloric acid, sulfuric acid and nitric acid with the concentration of 1 $\times 10^{-4}$ mol l^{-1} were tested. The results showed that the maximum peak height was obtained with Hydrochloric acid.

3.2. Calibration curves, quantitation limits, detection limits and precisions

According to the optimum conditions, AMOX and LF were determined and the calibration plots were prepared at 615, 617 nm respectively. The proposed method permits for determination of 1.0 - 10.0 μg ml^{-1}, 0.5 - 20 μg ml^{-1}. Quantitation limits and detection limits were 1.902, 1.797 and 0.571, 0.539 for AMOX, LF, respectively, relative standard deviation RSD % for 10 replicate measurements at the concentration 7 μg ml^{-1} for AMOX and LF were 0.077 and 0.193. Table 1 lists the analytical parameters of the proposed method.

Table 1: the analytical parameters of the proposed method

Parameter	Amoxicillin	Levofloxacin
Wavelength λmax / nm	615	617
pH	4	6
Concentration range / μg ml^{-1}	1.0 - 10	1.0- 20
Regression equation Y = bx +a	Y = 1.840x + 5.564	Y = 1.6432x + 5.8885
Slope b	1.840	1.643
Intercept a	5.564	5.889
Correlation coefficientr^2	0.9998	0.9996
Limit of detection / μg ml^{-1}	0.571	0.539
Limit of quantitation / μg ml^{-1}	1.902	1.797
RSD % n = 10	0.077	0.193
Specific absorption coefficient / l gm^{-1} cm^{-1}	0.0018	0.0016
Molar absorption coefficientƐ / l mol^{-1} cm^{-1}	0.772	0.594
Sandell's sensitivity S / μg cm^{-2}	0.543	0.609
t-test*	1.905	1.493
Recovery average %	90.812-101.857	91.889-102.317

*The theoretical value of t at p = 0.05is 2.101.

3.3. Effect of Interference and applications

The interference of some usual additives and excipients that combine amoxicillin trihydrate and levofloxacin hemihydrate in their pharmaceutical formulations like (starch, lactose, glucose, talc, Sucrose) was examined to estimate the selectivity of the suggested method. By implementing the proposed procedure with adding a well-known amount of the interference with concentration of 7 μg mL^{-1} and 70 μg mL^{-1} to 7 μg mL^{-1} of AMOX and LF solution. The results display that these excipients doesn't have any interference effect with the analysis by the suggested method. The proposed method has been applied to estimate amoxicillin trihydrate and levofloxacin hemihydrate quantity in different pharmaceutical forms. To confirm the effectiveness of the proposed method, the recovery average has been studied; the results are shown in Tables 2, 3.

Table2: Determination results of amoxicillin in pharmaceuticals

Preparation	Taken / μg ml^{-1}	Found /μg ml^{-1}	E%	Recovery%*
Amoxicillin-MDI, Iraq	7	6.880	-1.714	98.286
Brumox, India	7	7.100	+1.429	101.429
Labmox, India	7	7.112	+1.605	101.605
LDP Co-Amoxiclav, Spain	7	6.357	-9.188	90.812
Labmox, India	7	6.385	-8.786	91.214
Clavonan, India	7	6.520	-6.857	93.143
Bactolav, India	7	6.912	-1.257	98.743
Glomox, U.A.E.	7	6.552	-6.400	93.600
Amoxicap, India	7	7.130	+1.857	101.857
Amoxicillin-MDI, Iraq	7	7.120	+1.714	101.714

* Mean value of six measurements.

Table 3: Determination results of levofloxacin in pharmaceuticals

Preparation	Taken / μg ml^{-1}	Found / μg ml^{-1}	E%	Recovery%*
Lenoveer, Iraq	7	7.162	+2.317	102.317
Levotop, India	7	6.935	-0.927	99.073
Nevotic, Jordan	7	6.594	-5.794	94.206
Avicare, Jordan	7	6.838	-2.317	97.683
Levolab, India	7	6.432	-8.111	91.889
ALEVO, India	7	7.122	+1.738	101.738
Levofloxacin, China	7	7.081	+1.159	101.159
Nexquin, Australia	7	6.959	-0.579	99.421
Matador, Jordan	7	7.061	+0.869	100.869
Lenovan, Germany	7	6.630	-5.286	94.714

* Mean value of six measurements.

4. Conclusions

Uncommon flow injection designs based on merging zone technique with spectrophotometric detection were successfully developed to determinate amoxicillin trihydrate and levofloxacin hemihydrate quantitatively based on ion pair complex formation through their reaction with BCG in both pure and pharmaceutical formulations. Common excipients in pharmaceutical formulations have no effect on the analysis. The establishment of a remarkable lab-made valve which is the important component in the designed system was simple, inexpensive, and efficient with ease to clean, replace and repair with cheap and available components, furthermore the lab-made valve can be developed into miniaturized platforms.

References

[1]Den Berghe, Hélène Van, Xavier Garric, Michel Vert, and Jean Coudane. "New amoxicillin–poly (lactic acid)-based conjugates: synthesis and in vitro release of amoxicillin." *Polymer International* 60, no. 3 (2011): 398-404.

[2] British Pharmacopoeia on CD-Rom.2007. The Stationery Office on behalf of the Medicines and Health care products Regulatory Agency (MHRA). London. 5th.ed.

[3] Fazelirad, Hamid, Mehdi Ranjbar, Mohammad Ali Taher, and Ghasem Sargazi. "Preparation of magnetic multi-walled carbon nanotubes for an efficient adsorption and spectrophotometric determination of amoxicillin." *Journal of industrial and engineering chemistry* 21 (2015): 889-892.

[4] Freitas, Sueny KB, Valdinete Lins da Silva, Alberto N. Araújo, Maria Conceição Montenegro, Boaventura F. Reis, and Ana Paula S. Paim. "A multicommuted flow analysis method for the photometric determination of amoxicillin in pharmaceutical formulations using a diazo coupling reaction." *Journal of the Brazilian Chemical Society* 22, no. 2 (2011): 279-285.

[5] Naguib, Ibrahim A., Eglal A. Abdelaleem, Hala E. Zaazaa, Essraa A. Hussein, and Izzeddin Alsalahat. "Development and Validation of Spectrophotometric Methods for the Determination of Amoxicillin trihydrate and Dicloxacillin sodium in Their Binary Mixture." *Analytical Chemistry Letters* 8, no. 6 (2018): 844-861.

[6] Batrawi, Nidal, Shorouq Wahdan, and Fuad Al-Rimawi. "A validated stability-indicating hplc method for simultaneous determination of amoxicillin and enrofloxacin combination in an injectable suspension." *Scientia pharmaceutica* 85, no. 1 (2017): 6.

[7] Shah, Dhwani, Kunjal Vegad, Ekta Patel, Jigna Prajapati, Kaushik Patel, and Yogesh Patel. "DEVELOPMENT AND VALIDATION OF ANALYTICAL HPLC METHOD FOR SIMULTANEOUS ESTIMATION OF AMOXICILLIN AND PROBENCIDE IN TABLET." *Pharma Science Monitor* 8, no. 3 (2017).

[8] Delis, Georgios, Georgios Batzias, Georgios Kounenis, and Maria Koutsoviti-Papadopoulou. "Application and validation of a LC/fluorescence method for the determination of amoxicillin in sheep serum and tissue cage fluid." *Journal of pharmaceutical and biomedical analysis* 49, no. 2 (2009): 375-380.

[9] TANG, Hui-nan, Wei-dong GENG, Mou-sheng LIU, and Ya-ling YANG. "β-cyclodextrin enhanced fluorimetric method for determination of amoxicillin in dosage." *Chem Res Chin Univ* 27 (2011): 190-192.

[10] Xie, Xiaofeng, and Zhenghua Song. "Ultrasensitive determination of amoxicillin using chemiluminescence with flow injection analysis." *Journal of Spectroscopy* 20, no. 1 (2006): 37-43.

[11] Altiokka, Göksel, Nafiz Öncü Can, and Hassan Y. Aboul-Enein. "Determination of Amoxicillin by Flow Injection Analysis using UV-Detection, Potentiometry, and Conductometry in Pharmaceutical Preparations." *Journal of liquid chromatography & related technologies* 30, no. 9-10 (2007): 1333-1341.

[12] Marra, Mariana C., Rafael R. Cunha, Rodrigo AA Muñoz, Alex D. Batista, and Eduardo M. Richter. "Single-run capillary electrophoresis method for the fast simultaneous determination of amoxicillin, clavulanate, and potassium." *Journal of separation science* 40, no. 17 (2017): 3557-3562.

[13] Reddy, A. Vijaya Bhaskar, Zulkifli Yusop, Jafariah Jaafar, Nur Hidayati Jamil, Z. A. Majid, and Azmi B. Aris. "Development and validation of capillary electrophoresis method for simultaneous determination of six pharmaceuticals in different food samples combining on-line and off-line sample enrichment techniques." *Food analytical methods* 11, no. 2 (2018): 533-545.

[14] Ma, Li, Wei jun Kang, Xiang dong Xu, Ling mei Niu, Hong mei Shi, and Shan Li. "Flow-injection chemiluminescence determination of penicillin antibiotics in drugs and human urine using luminol-Ag (III) complex system." *Journal of analytical chemistry* 67, no. 3 (2012): 219-225.

[15] Hasanpour, F., Ali A. Ensafi, and T. Khayamian. "Simultaneous chemiluminescence determination of amoxicillin and clavulanic acid using least squares support vector regression." *Analytica chimica acta* 670, no. 1-2 (2010): 44-50.

[16] Owens Jr, Robert C., and Paul G. Ambrose. "Clinical use of the fluoroquinolones." *Medical Clinics of North America* 84, no. 6 (2000): 1447-1469.

[17] Sweetman SC, Martindale: the complete drug reference, London: The Pharmaceutical Press, 2010, 37, 317, 318.

[18] V.T. Andriole, The Quinolones, third ed., Academic Press, San Diego Calif, 2000.

[19] Van Toi, Pham, Thomas Pouplin, Nguyen Duc Khanh Tho, Pham Nguyen Phuong, Tran Thi Hong Chau, Nguyen Thuy Thuong Thuong, Dorothee Heemskerk, Tran Tinh Hien, and Guy E. Thwaites. "High-performance liquid chromatography with time-programmed fluorescence detection for the quantification of Levofloxacin in human plasma and cerebrospinal fluid in adults with tuberculous meningitis." *Journal of Chromatography B* 1061 (2017): 256-262.

[20] Czyrski, Andrzej, and Edyta Szałek. "An HPLC method for levofloxacin determination and its application in biomedical analysis." *Journal of analytical chemistry* 71, no. 8 (2016): 840-843.

[21] Nguyen, Trung Dung, Hoc Bau Le, Thi Oanh Dong, and Tien Duc Pham. "Determination of Fluoroquinolones in Pharmaceutical Formulations by Extractive Spectrophotometric Methods Using Ion-Pair Complex Formation with Bromothymol Blue." *Journal of analytical methods in chemistry* 2018 (2018).

[22] Al-Momani, I. F. "Flow injection spectrophotometric determination of the antibacterial levofloxacin in tablets and human urine." *Analytical letters* 39, no. 4 (2006): 741-750.

[23] Wang, Fei, Lihua Zhu, and Jingdong Zhang. "Electrochemical sensor for levofloxacin based on molecularly imprinted polypyrrole–graphene–gold nanoparticles modified electrode." *Sensors and Actuators B: Chemical* 192 (2014): 642-647.

[24] Rkik, Manel, Mabrouk Ben Brahim, and Youssef Samet. "Electrochemical determination of levofloxacin antibiotic in biological samples using boron doped diamond electrode." *Journal of Electroanalytical Chemistry* 794 (2017): 175-181.

[25] Tsai, Yu-Hsien, Ming-Jong Bair, and Cho-Chun Hu. "Determination of levofloxacin in human urine with capillary electrophoresis and fluorescence detector." *Journal of the Chinese Chemical Society* 54, no. 4 (2007): 991-995.

[26] Liu, Yan-Ming, Jun-Tao Cao, Wei Tian, and Yan-Li Zheng. "Determination of levofloxacin and norfloxacin by capillary electrophoresis with electrochemiluminescence detection and applications in human urine." *Electrophoresis* 29, no. 15 (2008): 3207-3212.

[27] Ulu, Sevgi Tatar. "Rapid and sensitive spectrofluorimetric determination of enrofloxacin, levofloxacin and ofloxacin with 2, 3, 5, 6-tetrachloro-p-benzoquinone." *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* 72, no. 5 (2009): 1038-1042.

[28] Ren, Qiuyi, and Xiashi Zhu. "Methyl-β-cyclodextrin/cetyltrimethyl ammonium bromide synergistic sensitized fluorescence method for the determination of levofloxacin." *Journal of fluorescence* 26, no. 2 (2016): 671-677.

[29] Chepurwar, S. B., A. A. Shirkhedkar, S. B. Bari, R. A. Fursule, and S. J. Surana. "Validated HPTLC method for simultaneous estimation of levofloxacin hemihydrate and ornidazole in pharmaceutical dosage form." *Journal of chromatographic science* 45, no. 8 (2007): 531-536.

[30] Meyyanathan, S. N., G. V. S. Ramasarma, and B. Suresh. "Analysis of levofloxacin in pharmaceutical preparations by high performance thin layer chromatography." *Journal of separation science* 26, no. 18 (2003): 1698-1700.

Studying the Prosperities of Time- Power Curve for Sky Ball Serve 'Star Trek' Skill and its Relation to Jumping Height of the Volleyball Spikers

Mahdi Salih Zaalan[1] , Dhurgham A. Neamah Al-Jadaan [1] , Imad Adel Ali[1]

[1]Faculy of Physical Education and Sports Sciences, University of Basra, Basra, Iraq

Email : mahdizaalan@yahoo.com , Dhurghamaljadaan@gmail.com, , Iraq19788@yahoo.com

Republic of Iraq, Basra University, Faculty of Physical Education and Sports Sciences, 2018-2019

Abstract

The researchers attempt to study the technical performance of the" star trek" skill both qualitatively and quantitatively in order to identify its origin and rules to help clarify these principles for the Spikers, the trainers and those who may interest in volley ball by identifying the relation between the power- time curve prosperities and jumping height during performing the star trek serve skill for the volleyball Spiker. The researcher used the descriptive approach to study the correlations and their cases as it's suitable for solving the research problem. The research sample consisted of (6) spikers of the Iraqi National Team who perform the star trek serve skill. The research sample was photographed by a Chinese (Casio) video camera with frequency (240 p/s).The (Zebris) power measuring bench was placed after the final line of the court and 10 cm from the final line off the court. It was analyzed by applying the(Kinovea) program, and the data was processed statistically by using the statistical pouch program (SPSS ver.23) After discussing the results, the most important result was a significant correlation between the mechanical variables of the power- time function (minimum landing force, the minimum landing force time, maximum hitting force, maximum bending of the knee joint of the pushing leg, the angle of the trunk at the maximum bending of the knee joint of the pushing leg, rising angle) during high jumping.

Key Words: bio-mechanical**,** kinetic analyzing, mechanical variables, time- power curve, volleyball, sky ball serve" star trek"

1- Introduction

Harnessing the biomechanics science has a great impact on improving the skill performance level of many events and sports, whether individual or collective games, such as volleyball where the responsible greatly look out for this science because it helps them in developing their spikers, as well

as, elevating their levels. Since most of this game skills are characterized by kinetic speed, it's not valid or non- objective to judge them through the naked eye or the field experience of the trainer in order to understand the skill and identify its mistakes, so the importance of mechanical analysis of kinetic skills in volleyball lies in breaking up the movement or the skill to be analyzed and studied in order to identify its kineticapraxia, and then explain the mechanical reasons for its success and failure. Success in all events and sports activities requires following up the right scientific method that achieves the goals set by trainers and experts to achieve the best breakthroughs. Volleyball is one of the games that require continuous searching and studying due to the multiplicity of its skills and the many variables that occur during matches; so it needs diversity of exercises to enable the spiker to be more proficient and more stable during performing skills. One of these skills is the star trek serve skill, which is also a basic offensive skill and the first offensive weapon in modern volleyball because of their impact on the defensive formations of the opponent team to prevent the ball from reaching the libero easily and therefore affects his offensive plans and facilitate the task of the back-row to block the balls coming from the opponent team or get a point directly. Volleyball spikers must realize that the serve is not just the ball crossing over the net but it should be performed perfectly and accurately so that they can score points through it. Therefore, the researchers decided to study and analyze this skill and identify correlations of some of its variables through kinetic and kinematic analysis to elevate to the perfect technical performance level. Thus, in this study we try to broaden the knowledge base to study the skill performance of the star trek serve skill of volleyball spikers, and to provide a new vision to improve the skill performance level through mechanical analysis. So, the researcher tries to study the technical performance of this skill to identify the bases and rules of the movement to help clarify these bases for spikers, trainers and those interested in volleyball. Full acquaintance of information related to the spiker movement, whether anatomically, mechanical, physiological or biological, is one of the key elements of the techniques success and volleyball technical skills developing. The results of tracking the movement study from a mechanical point of view contribute in remarkable progress of skills by finding kinetic solutions resulting from the perfect investment of the spiker's own self and related external forces that directly affect the skills performance. The skilled forming of the star trek serve depends on the apparent performance and external form of skill without deep understanding of the mechanical details and variables and relies on those variables to correct the errors associated with the performance of the new learners, which are often mechanical and thus acquiring skill by having skill errors in the youth stage and the stability of those errors in advanced stages, which makes it difficult to develop and modify the skill performance. Therefore, the researcher considered studying the most significant characteristics of power - time function for the spiker during performing the star trek serve skill and its impact on the jumping height during performing the star trek serve skill for volleyball spiker in order to help him identify and explain these characteristics for both trainers and spikers to be aware of their strengthens and weaknesses values to overcome them.

2- The Two Research Objectives

1- Identify the prosperities nature of time- power curve for sky ball serve" Star Trek" skill

2-Identify the relation between the prosperities of time- power curve for sky ball serve" Star Trek" skill and the high jumping during performing the star trek serve skill for the volleyball Spikers

3-Research approach and its field procedures

The researchers used the descriptive approach to study the correlations and their cases as it's suitable for solving the research problem, which means studying and deepening in the facts and the correlations between those facts, as well as, representing the relations between the facts, realities and their correlation provide descriptions of all phenomena accurately and scientifically (**Wajieh**:**1993**).

The researcher collects his data and information either from the whole indigenous community or from a sample representing this community (Ahmed: 1987), where the research sample was selected including (6) the professional volleyball Spikers of the Iraqi national team, who perform the star trek serve skill. The sample constituted a ratio (33.333) %) from the indigenous community. In order to be coherent, the sample was consistent in length, age, mass and training age. Where the value of this coefficient was less than (30%), which indicates the coherence of the sample (**Wadih: 1999**), (age 24.833 ± 2.858), (training age 9.667 ± 2.503 years), (length 190.168 ± 4.021 cm), (mass 86 ±7.694 kg) and (leg length 101.833 .8 2.563 cm). A number of research tools and instruments were used (Arab and foreign references, legal volleyball court,(5) legal balls, tape measure, Zebris power measuring bench,(1) Chinese Casio video camera with frequency (240 p/ sec), and Pentium-4 computer).

The researchers conducted an exploratory experiment on (3) spikers of the Iraqi volleyball Premier League; this experiment included identifying the force measuring device work by zeroing the bench according to the ground rigidity that shows its validity. This experiment has been conducted to find out the power imposed for the bench and how the forms, characteristics and values of curves are obvious, in addition to identifying the place and height of the camera. The research used the following mechanical variables:

1-Maximum landing force: it is the highest value recorded on the curve within the landing stage on the bench, measured by Newton.

2- The maximum landing force time: The taken time was counted for the nearest millisecond from the moment of contact with the bench until the maximum landing force was recorded. It was measured by Seconds.

3- Minimum landing force: it is the lowest value recorded on the curve within the digging stage on the bench measured by Newton.

4-**- The minimum landing force time:** The taken time was counted for the nearest millisecond from the moment of contact with the bench until the minimum digging force was recorded. It was measured by Seconds.

5- Maximum hitting force: it is the highest value recorded on the curve within the final hitting stage on the bench measured by Newton

6- **The maximum hitting force time**: The taken time was counted for the nearest millisecond from the moment of contact with the bench until the maximum hitting force was recorded. It was measured by Seconds.

7- Landing angel: It is the angle between the horizontal level and the line from the center of body weight and the anchor point of the landing foot in the first contact of the pushing leg with the bench; it was measured from the back by degrees

8-Maximum bending of the knee joint of the pushing leg: it is the angle between the line from the ankle joint to the knee and between the line from the knee to the hip joint of the pushing leg; it was measured from the back at the lowest value by degrees

9-The angle of the trunk at the maximum bend of the knee joint of the pushing leg: it is the angle between the horizontal line parallel to the ground from the hip joint and the line passing through the trunk; it was measured from the front at the lowest value of the knee joint by the degrees

10-Rising angle: It is the angle between the horizontal level and the line from the center of the body weight and the anchor point of the rising foot in the last contact of the pushing leg with the bench ; it was measured from the front by degrees

11- Jumping height: It is the length of the straight line between the vertical lines from the hip joint at the moment of leaving the bench to the intersection point with the horizontal line passing through the hip joint at the moment of hitting the ball is; it was measured by centimeters. The researcher conducted the main experiment on the research sample of (6) spikers on 11 and 13/1/2019, where the sample was photographed by a Chinese-made video camera (Casio) type with a frequency of (240 p/s) placed on a tripod through all technical performance stages of the skill, at a distance (5.50 m) from the place of the spiker performing the star trek serve skill and the height of the lens (2 m) from the ground. The Zebris power measuring bench was placed far away from the final line of the courtat 10 cm off the court. And then the experiment was conducted and several attempts for each spiker were photographed to choose the best attempt, where the spiker steps closer to the bench of strength measuring and jumps to perform the star trek serve skill. One of the analyzing programs was used with a developed calculator to get more accurate results. (**Kinovea**) which is a specialized program focusing on the computer was used to analyze sports movements to figure out the values of angles, dimensions and times after transferring files (video clips of the movement) and open them through the program which is an integrated file allowing users of this system to show the video collection in the form of animated thumbnails that can be saved and referenced, allowing them to encode certain movements within the video and detect movement in frame after frame or slow motion, and enable them to add any content to their videos by using drawing tools and adding different shapes such as lines and arrows with a description of the sites. The data were statistically processed using the statistical bag program (SPSS ver. 23) through the following rules (1- Arithmetical mean, 2-standard deviation, 3-percentage, 4-simple correlation).

4- Discussion of the Results

Table (1)

Shows the arithmetical mean and standard deviation values of the mechanical variables for the research sample

n±	h	Measuring unit	**mechanical variables**	N
3.189	60.833	degree	Landing angel	1
282.049	1748.667	Newton	Maximum force for landing	2
0.034	0.077	second	The maximum landing force time	3
44.933	612.167	Newton	Minimum force for landing	4
0.026	0.198	second	The minimum landing force time	5
51.332	995.833	Newton	Maximum hitting force	6
0.027	0.083	second	The maximum hitting force time	7
8.408	119.5	degree	Maximum bending of the knee joint of the pushing leg	8
7.737	105.667	degree	The angle of the trunk at the maximum bend of the knee joint of the pushing leg:	9
4.131	84.333	degree	Rising angle	10
7.448	92.667	cm	Jumping height	11

Table (2)

Shows the correlation coefficient values between the mechanical variables and the jumping height for the search sample

Jumping height		mechanical variables	N
Sig	correlation coefficient		
0.050	0.811	Landing angel	1
0.921	0.052	Maximum force for landing	2
0.502	0.346	The maximum landing force time	3
*0.026	0.866	Minimum force for landing	4
*0.019	0.884	The minimum landing force time	5
*0.025	0.869	Maximum hitting force	6
0.085	0.751	The maximum hitting force time	7
*0.044	0.824	Maximum bending of the knee joint of the pushing leg	8
*0.012	0.908	The angle of the trunk at the maximum bend of the knee joint of the pushing leg:	9
*0.014	0.0901	Rising angle	10

From the table above, there is no significant correlation between some biomechanical variables of the force-time function (maximum landing force, time taken for the maximum landing force, the maximum hitting force time, landing angle) with the jumping height variable. This is due to the difference in the spikers' levels, in addition to the choice of each spiker to the best position to bend and hit and the difference in the spikers' strength level, as well as, closer steps to lean on the bench, all contributed to not correlate with the jumping height.

Discussing the results of the correlation values of the variables of the minimum landing force and the maximum hitting force and the time taken for the minimum landing force with jumping height

Force plays a prominent role in achieving good results when playing sports, especially in terms of producing power at the right moment and speed, as the concentration of power with increased speed is one of the characteristics of good skill performance (Seddiq: 1980). The power focusing on the bench

is an indicator for the spiker's rush (approximate speed); and this time may be long or short according to the horizontal speed obstruction, as the spiker attempts at the maximum bending to convert the horizontal speed to semi-vertical. Basing on this, the great approximate speed requires a great force in order to obstruct the horizontal speed and turn it into semi-vertical; therefore, the relationship between the two forces will be significant (the minimum landing force and the maximum hitting force), as the minimum landing force will match the maximum hitting force when contacting, which in turn movesto the maximum final hitting force. The minimum landing force is the most critical moments of the stage affecting the technical performance level and the required preparing for hitting as a result of the increased load on the pushing leg, which requires increasing in the force exerted at the end of the blockingstage of its standardized relationship affecting the total hitting force, so we discovered that it is the most important impact on the technical performance level; thatwas confirmed by some references as one of the most important requirements of the stage (**Karl: 1985**). In addition, this relationship resulted from the low values in the blocking stage and because of the short time at this stage, which means if a significant change in the momentum of the body, the spiker must use a great hitting within using a small space of contact with the ground and by the law Newton III, the ground returns this hitting to the body, which in turn moves as it has less mass than the earth. When the force is great and the time is short, the spiker gets a big hit. At this stage, there is a change in the body's momentum direction from the horizontal to the semi-vertical direction and at every moment of performance (rising) the body possesses kinetic energy and potential energy, which collectively constitutes total mechanical energy. The taken time for the blocking force impact occurs between the initial and final hitting time which is very important in the hitting process as it’s a combination of the sum of multiplying force by time. The sudden change of the body state influenced by force is directly related to the element of time (**Talha 1993**). Therefore, the time of the hitting stage will correspond to the final hitting time, which in turn affects the total hitting time, so the spiker must be careful to synchronize the use of force and harness it through the appropriate bending and stretching and transfer it through the body joints within the flow of movement temporally and spatially. If there's no corresponding such as early or late bending, it leads to losing the force. In addition, at this stage of (the minimum force stage) the body weight line is heading downwards. When the body begins to descend gradually through bending the knee joint of the pushing leg, the force that works downwards is the body weight plus the force used towards the ground; thus the body moves downwards, but the earth reaction is less than the weight of the body. Hence, we conclude that when the body direction is downwards, the earth reaction force is less than the body weight force; therefore the force will be low, and the body must be in a vertical position and on the force effect line because the vertical position qualifies it to achieve better force (**Wadih: 1993**). Maximum hitting force variable is one of the most important variables in carrying out this skill, as a volleyball spiker is characterized by exerting all his myodynamic to achieve the vertical distance required to hit the ball in the shortest possible time, because the speed of jumping depends on the total exerted forces in the required direction with appropriate flying angle to achieve the skill goal. It's mentioned that developing the exerted force during the movement and in a right scientific technique is the basic rule for a better level of performance (**Soliman and Awatef: 1978).**

Discussing the results of the correlations between the maximum bending of the knee joint of the pushing leg, the trunk angle during the maximum bending of the knee joint of the pushing leg and the jumping height

The right timing and kinetic sequence during technical performing and the bending and stretching movements of the body joints directly related to the movement of the rest of the body including the trunk which is approximately 43% of the body mass, it means that the right timing between the bending and stretching movements is closely related to the movement of the rest of the body parts which results in goodkinetic transferring and therefore an appropriate reaction (**Saeb: 1991**). In this skill, there is a bend in the knee and the trunk angels because the kinetic speed and acceleration that precede the instantaneous stopping of the pushing leg for changing the momentum direction will enable the spiker to adapt two perfect angles in order to block force and reduce inertia, in addition to preventing injuries resulting from the legs' muscle fibers tension which sometimes reach its maximum degree. Bending of the knee joints and trunk before the moment of leaving in accordance with the performance requirements and kinetic duty, which provides a great elementary force, increases acceleration, as well as, the trunk position that begins to tilt resulting in generating torque that causes the trunk to gain angular speed and thus angular momentum during the tilt process and then bend forward, helpinggenerate extra force. There are two basic principles that can be applied, especially in running, jumping and throwing when the spiker is interested in getting maximum speed and force. They're defined as using all joints that can be used, as well as, using each joint in its order and timing (**Peter: 1996**), where the rising angles can be in the desired direction if the true path of force was used by all joints involved in muscular action and its proper timing to determine the correct path to the spiker's weight center.

Discussing the results of correlation between the rising angel variable and the jumping height:

The researchers attribute the reason for the significant correlations to the performance nature of this skill because it needs sufficient vertical and horizontal pushing to jump and reach the appropriate height in order to hit the ball in the right place and time, in addition to the speed of the center of the body's weight, which requires both pushing and time elements. When pushing increases with less time, the speed will increase in this skill, which requires the highest vertical flight distance through the highest point of the hip joint at the moment of hitting the ball and the highest speed of the body weight center which expresses decreasing in the exerted effort. Therefore, the transitional speed of the body requires a lot of searching and finding out the possibility of shifting the speed from the horizontal to the semi-vertical direction during the rising process, which is one of the key factors in success when applying effective rising in order to achieve the mechanical goal of the movement. the rising angle in this skill plays an active role in determining the correct path to the body's weight center beyond the rising i.e.(flying stage); this requires perfect investment towards the path to be achieved through the effective stretching of the knee joint of the pushing leg before the moment of leaving. Wolf pointed out

that if the effective force doesn't impact during the rising of a work line that passes through the body weight center away from the torque setting, it will cause the body to tilt in the opposite direction (**Wolf Can: 2001**). Accordingly, the rising angle has contributed in determining the final work of the star trek serve skill during jumping after leaving the ground in accordance with the mechanical requirements of this skill. Therefore, this angle is one of the variables related to the angle stretching of the knee joint of the pushing leg before the moment of leaving and the accompanied force of the ground reaction, which matches determining the special kinetic form of the body and having the right position of the body weight center path, which is represented in warming up the appropriate and right position of the trunk during performing the star trek serve skill while jumping in order to achieve kinetic apraxia for both the trunk and arms. There's no doubt that the rising angel is one of the main and significant elements that works on determining the height level which the spiker's weight center can reach. In this regard, **Samir** has confirmed that the angel measurement is subjected to the performing nature of the skill to be carried out ***(Samir: 1999***). The objective of modern mechanical analysis studies is how to get the greatest mechanical energy and the possibility of retaining a significant amount of it during the rising stage. We can get energy from increasing approximate running and the movement speeds of the limbs so that we can't loss a significant amount of mechanical energy, which helps the spiker to rise from the right angle and at the right time to perform the star trek serve skill perfectly. Accordingly, the rising angle determines the right position of the body at the moment of pushing, and the body's weight center path cannot be changed in the required direction after the rising process (after leaving the bench), as well as, it draws the final path of the movement of the body's weight center according to the mechanical requirements of the jumping skill. The rising angle works on retaining the amount of movement in such a way that the spiker might not lose speed during flying; the loss of movement decreases in case of appropriate angles (Yaroub: 2001).

Conclusions

1- There is a similarity in the form nature of the power-time function characteristics for the star trek serve skill of volleyball because it contains two peaks; the first was the primary force (maximum landing force) and the second was the final force (maximum pushing force).

2- The landing force on the bench is much greater than the maximum final pushing force in all performance of the star trek serve skill of volleyball.

3- There is a difference in the characteristics of the recorded curves between the performance and their impact time along the stages of the star trek serve skill of volleyball recorded on the bench.

4- The characteristics of the mechanical variables curves achieved in the step are conditioned by two matters; the first is legal by not committing a mistake and the second is mechanical to convert these variables from their horizontal to vertical shape during performing the star trek serve skill of volleyball.

5- Some mechanical variables of the power-time function which are (maximum landing force, maximum landing time, maximum pushing time, landing angle) have no impact on the jumping height for the star trek serve skill of volleyball.

6- Some mechanical variables of the power-time function which are (minimum landing force, minimum landing force time, maximum pushing force, maximum bending of the knee joint of the pushing leg, angle of the trunk at the maximum bending of the knee joint of the pushing leg, rising angle) impact on achieving the best jumping height in the star trek serve skill of volleyball.

References

1- Ahmed Badr: the origins of scientific research and its methods, 3rd edition, Kuwait, The Agency of Publications, 1987, p: 300.

2- Peter J.L. Thompson: Introduction to Training Theories, Athletics Bulletin, Cultural Science Magazine, International Amateur Athletics Federation, Regional Development Centre, 1996, p: 403.

3- Soliman Ali Hassan and Awatef Mohammed Labib: The Development of Muscle Power, Cairo, Dar Al-Fikr Al-Moeaser, 1978, p: 6

4- Samir Musallat Al-Hashimi: Biomechanical sports, University of Mosul, Dar Al-Kutub for Printing and Publishing, 2nd edition, 1999, p: 267

5- Saeb Al-Obeidi (et al.): Applied Biomechanics, University of Mosul, Dar Al-Kutub for Printing and Publishing, 1991, p: 88

6- Seddiq Tolan: the effect of the development of the special force with speed on improving the performance of some movements of the rising group in gymnastics, Doctoral thesis, Faculty of Sports Education for Boys, Alexandria, 1980, p: 3

7- Talha Hussein Hossam Al-Din: Biomechanics theoretical and applied bases, Cairo, Dar al-Fikr al-Arabi, 1st edition, 1993, p: 400

8-Karl Heinzbauffield and Kerd Schröter: Rules of the field games, translated by Qassim Hassan Hussein and Ether Sabri Ahmed. Mosul, Dar Al-Kutub for Printing and Publishing, 1985, pp: 228-229

9- Wajieh Mahgoub: Methods and approaches of Scientific Research, Baghdad, Dar Al-Hekma for Printing and Publishing, 1993, p: 318

10-Wadih Yassin Al-Tikreety: Study of the relations between some biomechanical variables in the Snatch , Doctoral thesis, Faculty of Sports Education, Baghdad, 1993, p: 104

11- Wadih Yassin& HassanAl-Obeidi**:** Statistical applications and using the computer in Sports Education, Mosul, Dar Al-Kutub for Printing and Publishing, 1999, p: 161

12-Wolf Can: Athletics Bulletin, Cultural Science Magazine, International Amateur Athletics Federation, Regional Development Centre, 2001, p: 22, translated by Talha Hossam Al-Din

13-Yaroub Abd Al-Baqee: analyzing study of the amount of the lost movement in rising stage during performing some sports events, studies and researches magazine for Sports Education, Basra University, Faculty of Sports Education, issue 27, 2001, p: 15.

Android Mobile Application For Smart Phone Using React Native

Kadhum A. AL-Majidi[2], Ghusoon Idan Arb[1]

[1] Computer Science&Information Technology, Sumer University, Thi Qar, Iraq
[2]Department of Computer Engineering, University of AL-Mustansaryia, Baghdad, Iraq

*Corresponding author: (Kadhum) Email: eng.computer38@gmail.com

Abstract:[1]-
With the capacity of React Native, designers are fit for making mobile app for both iOS and Android at the same time, “Iraqi Tourism Guide" apputilizes React Native based on android studio framework since it gives a richapp structure that enables the client to create the inventive applications in java environment. This research includes an electronic tourism guide which will give the detail and exact data about an user location such as Navigation, Practical Information, Festival, Shopping, Food Services, Security, Emergency, Safety, The Last News, Sports and Accommodation, Also Iraqi Tourism Guide provides political news, medical services, tourist information office, breakfast, bed and hotels, maps , guides and road conditions etc. With the headway in the portable apps one can be taken significant and valuable data without exercise in futility by such only one connection app. Also the app provides the classification of sites to find in Iraq, for example, Arbil, Sulymanea, Baghdad, Karbela, and a lot more is featured.

Keywords: Android Studio, Mobile App, React Native, Iraq, iTourism.

I. INTRODUCTION

Offered in the research smartapp guide is a portable app that proactively suggests the vacation destinations around, which is at present better to visit. The principle thought of the methodology is that this application comprises of a few administrations, which are joined by the intelligent space innovation for supplying the visitor with data as indicated by close to home advantage [1]. Tourism is single of significant assets in Iraq financial management especially religious sits. The quantity of visitors has been expanding step by step [2]. In this mean, internal tourism is a standout amongst the most significant issues the world over at present [3], Religious tourism is one of the oldest types of tourism. It is a visit to religious sites in the world such as Mecca and Madinah in Saudi Arabia, Najaf, Karbala, Kadhimiya, Samarra and Baghdad in Iraq. These cities contain religious shrines and this is for Muslims and other regions of the world as well as the Vatican in Rome for Christian religion.

II. APPLICATION FEATURES

“Iraqi Tourism Guide”,The androidfound portable app, The system gives its clients the simplicity and adaptability to fulfill the need of visitors in Iraq whenever, anyplace. In this manner, The significant highlights of the app includes an electronic sightseeing guide which will give the feature and exact data about an user location such as address, weather, temperature and traffic jams level, nearest places, direction etc. Notwithstanding that, the recording of sites to find inIraq such as Arbil, Sulymanea, Karbela, and a lot more is featured. React nativeis an energizing structure that empowers web engineers to make hearty versatile app utilizing their java information. It presents quicker versatile advancement, and increasingly effective code sharing crosswise over the web, Android and iOS, without relinquishing the end clients test or app quality.Portable administrations in the travel industry space have the assignment to fulfill data prerequisites of visitors by furnishing them with a wide scope of movement related data [4].

This work was supported by the Foundation Name under Grant No. XXXXXX.
Corresponding author email: author@hostname.org.

II. TECHNOLOGIES USED

XML: - It is known as marking environment which characterizes a lot of gathering of principles for encoding a account in an arrangement what is both intelligible just as machine-decipherable. The plan point of XML stress straightforwardness, All-inclusive statement and simple to use over the web. It is a literary information design with powerful help by means of Unicode for various body language. In spite of the fact that the plan of XML center around reports, it is for the most part utilized for the portrayal of subjective information bodies such as those what are utilized in web administrations [5].

Java:- It is publishing environment explicitly intended for utilized in nature of the web.

It was design like close-by C++ to such an extent that own the "appearance and feel" for C++ language, in any case, it is more simple to use than C++ and stress an item situated programming model. Java can be utilized to structure a total applications that may perform on a solitary PC or be dispersed among servers and customer in the system. It can likewise be utilized to develop a small app applet or model for using as a major aspect of a page. Applets do it plausible for a site page client to communicate with the site.

React:-Here and there alluded to as React.js, is a java script system created by Facebook and discharged as not closed source on 2013so as to help the advancement network to manufacture interfaces. Facebook needed a structure that could take care of their concern with complex UIs which had information that changed after some time. React gives the "see" some portion of the improvement worldview model view controller and as a structure which assist the View in MVC, one can trust that React just deals with the customer side. In any case, it can likewise be delivered at the server part, bringing about a between operable correspondence between the opposite sides [6]

React Native: It is a java content structure for structure local versatile applications. It utilizes the React structure and offers huge measure of in fabricate parts and Android Programming Interfaces. It is a java content system for composing genuine, locally rendering versatile application for Android and iOS. React Native depends on React, Facebook is java content library for structure UI, be that as it may, rather than focusing on the program, it targets portable stages.

At the end of the day, web engineers would now be able to compose versatile apps that appearance and feel really "native", all from the solace of java content library that was at that point show and love. Besides, on the grounds that a large portion of the code we compose can be divided between plat structures, react native does it simple to all the while produce for both iOS and android.

Android Studio:-Android is another, cutting edge versatile working framework. Android portable app improvement depends on java environment codes.

It is a significant stage to create versatile app utilizing the product stack [5].

Android Emulator:-It reproduces Android gadgets on the pc so we can test the app on an assortment of gadgets and Android Programming Interface levels without needing each physical gadget. The emulator gives practically the majority of the capacities of a genuine Android gadget. We can reenact approaching telephone calls and instant messages, indicate the area of the gadget, mimic diverse system speeds, reproduce pivot and other equipment sensors, and substantially more.Testing the application on the emulator is somehow or another quicker and simpler than doing as such on a physical gadget. For instance, We can exchange information quicker for emulator than a gadget associated over USB.

The emulator accompanies predefined setups for different Android telephone, Wear OS, tablet, and Android television gadgets [7].

IV. IMPLEMENTATION

The app was implemented based on Android Studio 2.2 which bases Java JDK Version 1.8 to supply a robust, easy to use arrangement. It tends to be introduced on any Cell phone with android OS Variant Number 6.0.1 Marshmallow providing Target Programming interface level 23 [8]. Additionally we utilized react native apps are composed utilizing a blend of java content and XML marking, well-known as JSX. At that point , in the engine , the react native "connect" conjures the local rendering Programming interface's in java for Android or target C for iOS. In this manner, the app will deliver utilizing genuine portable UI segments, not web sees, and will closely resemble some other versatile app.

React Native approach stage highlights like the telephone camera, or the client's area. React Native presently underpins the two iOS and Android, and can possibly extend to future stages also [8]. Facebook has reported another system named React Native that guarantees to convey a completely local involvement with the utilization of just a single code base. Internal tourism is the most important type of tourism available to the Iraqi individual, which is characterized by low costs. Tourism is an important economic activity in the process of economic and social development and economic integration. In addition to the agricultural and industrial sectors, tourism comes in third place, which is no less important than the work of these two sectors in filling the balance of payments deficit and providing job opportunities that can absorb unemployment and employment.

As a result of the development and availability of transportation means paved the way for the various segments of the developed society to participate in tourist demand. Thus, tourism has been integrated as a phenomenon and has expanded considerably both internal tourism and external tourism. The factors of technological advancement, population growth, people's entry, exchange of experiences and cultures, and the spread of paid means of education and vacations have contributed to the real development of the tourism industry. So as to comprehend the specialized supporting of react native, first we'll have to review one element, the Virtual Document Object Model.
With react, virtual Document Object Model goes about as a covering between the designer's portrayal of what things should appear, and the job done to really render the app onto the site. To render intuitive UIs in a program, designers must alter the program's DOM. This is a costly advance, and intemperate. Keeps in touch with the DOM significantly affect execution, As opposed to straightforwardly render changes on the site, React registers the important changes by utilizing an in memory form of the DOM, and renders the insignificant sum essentialFigure.1 explains how this operate.

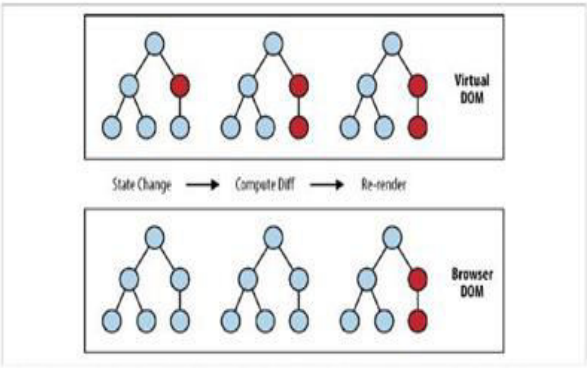


Figure (1): Execute computation in the virtual DOM controls rendering in the program DOM

In Figure.2 show how the react native work, Rather than rendering to the program's DOM, React Native summons, java Android Programming Interfaces for delivering to android parts, or target C APIs render to iOS segments.
This groups react native separated from different cross stage application advancement choices, which regularly end up delivering online perspectives.

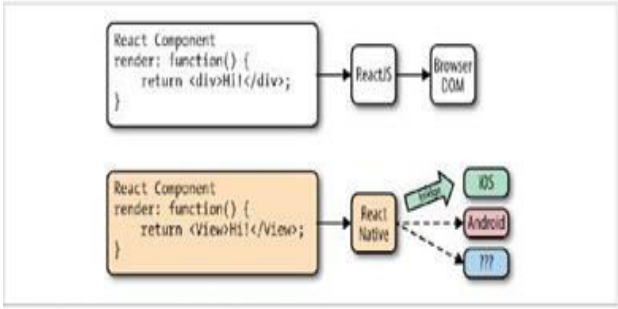


Figure (2): React can deliver to various targets

This model orders the client to associate his account to the system in ready to get to the framework.
One more capacity under the Appraisals Model is it likewise enables the client to rate a visitor goal from one to five stars.
This module produces month to month and yearly records for the most favored visitor goals per locale and for the entire Iraq, and of the evaluations of every traveler goal. [9]. In the previous section, we depict specialized subtleties of our app. We built up this app utilizing React Native [3]. This application requires the client to interface Facebookrecord to the app in ready to get to the framework.

V. ADVANTAGES OF REACT NATIVE

The way that React Nativereally delivers utilizing its host stage's standard rendering Android Programming Interfaces empowers it to emerge from most current strategies for cross-stage app advancement,for example Ionic or Cordova. Existing strategies for composing versatile applications utilizing mixes of CSS, HTML, java script and normally render utilizing web sees. While this methodology can operate, it likewise accompanies downsides, particularly around execution. Moreover, they don't for the most part approach the host stage's arrangement of local UI components. At the

point when these systems do endeavor to mirror local UI components, the outcomes as a rule "feel" only somewhat off; figuring out all the fine subtleties of things like movements requires a colossal measure of exertion, what's more, they can rapidly turned out to be outdated. Interestingly, React Nativereally makes an interpretation of the markup to genuine, native UI components, utilizing existing methods for rendering sees on whatever stage we are operating with. Furthermore, React operates independently from the primary UI string, so the application can keep up elite without giving up capacity. The update cycle in React Nativeis equivalent to in React: when state or props alter, React Nativere-delivers the perspectives. The significant distinction between in the midstReact and React Native in the program is that React Nativedoes this by utilizing theuser interface library of it is host stage, as opposed to utilizing CSS and HTML markup. For engineers acquainted for dealing with the page with React, thisimplies we can compose portable applications with the execution and look and feel of a native app, while utilizing well-known apparatuses. React Nativeadditionally speaks to an improvement over typical portable advancement in two different regions: the designer experimentand cross-stage advancement potential [8].

VI.THE MOBILE APPLICATION

Advancement of clever visit direct framework is to update the data dimension of the travel industry, and to accomplish self-the travel industry of sightseers. The app we configuration comprises of two pieces of server part and versatile customer. This travel industry mobile app created gives distinctive visit plans and these visits are characterized into various classifications. Consequently any client can choose the kind of visit contingent upon that classification. The framework removes the information from the client and a bundle will be made physically by a guide as per client inclinations. This physically prepared arrangement will be arrive to the clients mail, further which reservation will be finished. The principle preferred standpoint of our app is for individuals who are unconscious of the spots the client is going to visit and dispenses with the client to scan the web for better places [10].The Emulator introduces and begins the applications quicker than a genuine gadget and permits our own to model and test the application on different Android gadget setups: tablets, Android TV devices, phones and Android Wear. We can likewise reenact an assortment of equipment highlights, for example, movement sensors, GPS area, organize idleness, and multi-contact input. The fire base Aide enables us to associate the application to Firebase and include administrations, for example, Examination, Verification, Warnings and more with well-ordered strategies directly into Android. Worked in devices for Cloud Stage likewise assist we coordinate our Android application with administrations, for example, Google cloud termination and venture modules exceptionally intended for Google Application Motor. Android Studio gives graphical user interface instruments that disentangle the less intriguing pieces of use improvement. Emulator is incorporated with Android environment[7].Android is an not closed source working framework, in light of a solitary modified Linux portion and is claimed with Google. Google is in charge of the development with each other by the not closed hand set Partnership. The working framework was at first idea to be a stage for advanced cameras when the improvement by Android Inc. started in 2005.In any case, Google purchased the organization and after three years the first cell phone working Android was offered for sale. In 2015, about 83% of the versatile market utilizes Android and 1.5 billion apps are loaded by Android clients consistently. Android working framework is a pile of programming parts and as appeared in figure (2), the Android design comprises of four layers:, and applications, Application system ,Android runtime and Libraries, Linux kernel.
[6].

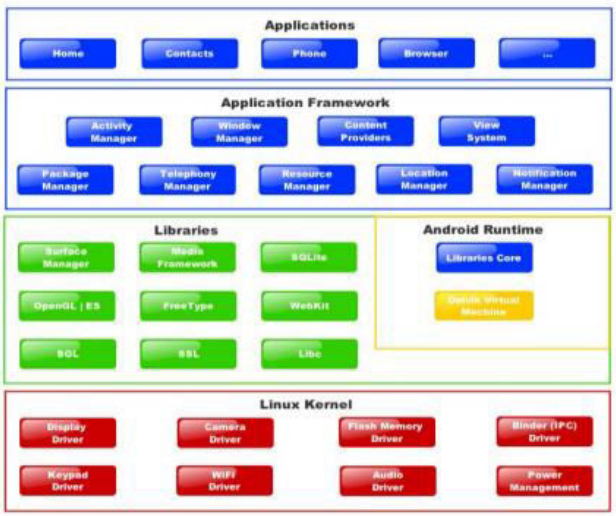


Figure (3): Android Stage Diagram

VII. RESULTS AND CONCLUSION

The research presents clever versatile "Iraqi Tourism Guide"app for giving the vacation spot around dependent on client inclinations and current circumstance [1].In figure(4) shown the home page of our application.

Figure (4): Home Page

Lately, the fast advancement of PDA and portable web innovation has given great stage and chance to electronic evidence app.

The presence of keen visit direct framework not just catch up with the lack of conventional visit control administration, yet in addition meets the customized needs of vacationers. In this research, we mostly expand the plan and improvement procedure of the clever visit direct framework dependent on android versatile terminal [11].

See figure (1) show how to use the android emulator to build the Iraq Tourism Guide for practical information as an example, it explain car rentals, cash points, currencies, hairdresser, money exchange and tourist info office.

Figure (5): *practical information*

See table (1) shown the administrations given by Iraqi Tourism Guide. For example Navigation, Practical Information, Festival, Shopping, Food Services, Security, Emergency, Safety, The Last News, Sports and Accommodation.

Table1. Mobile Services Categories

Services	***Details***
Navigation	maps and guides, road conditions, routing service
Practical Information	cashpoints ,car rentals , currency money exchange, , hairdresser, tourist information office,
Festival	, nightlife, day trips, , cinema/theatre, destination- specific activities, wellbeing, children activities , music,
Shopping	souvenirs, gifts, clothes
Food Services	clubs , restaurants, pubs
Security, Emergency, Safety	Pharmacies, medical services
The Last News	stock quotations , business news, political news
Sports	clothes, gifts, souvenirs
Accommodation	breakfast, bed and hotels

VIII. CONCLUSIONS

In this research, we present Iraqi Tourism Guide app for smart phones. The most significant component of this app is the client get vacationer data on single touch. The outcome empowers the work to build up the iTourism versatile application so as to fulfill the need of sightseers. This research includes an electronic visitor which will give the detail and precise data about a client area such as Navigation, Practical Information, Festival, Shopping, Food Services, Security, Emergency, Safety, The Last News, Sports and Accommodation etc. Then again, individual visit has adaptability to choose the areas and time to tour and change openly the touring plan while voyaging. Anyway the traveler needs to see the areas and courses and time to visit areas to travel. Checking the application on the Android Emulator is somehow or another quicker and simpler than doing as such on a physical gadget. Since the arranging is done physically, it very well may be additionally moved up to dynamic arranging of the visits. Additionally the booking should be possible through the web application itself by the client rather than the visit manages. The application can additionally be actualized for the remainder of the states and furthermore to various nations.

REFERENCES

1. A. SMIRNOV,A. KASHEVNIK, "APPLICATION FOR E-TOURISM: INTELLIGENT MOBILE TOURIST GUIDE", CONGRESS ON ADVANCED APPLIED INFORMATICS, RUSSIA ,2015.

2. G.SATO, G.HIRAKAWA, "PUSH TYPED TOURIST INFORMATION SYSTEM BASED ON BEACON AND AUGUMENTED REALIITY TECHNOLOLOGIES", IEEE CONFERENCE, 2017.

3. U. TIANKAEW, P. CHUNPONGTHONG, V. METTANANT, SEVENTH ICT-ISPC, THAILAND, 2018.

4. C.GRÜN, B.PRÖLL, "ASSISTING TOURISTS ON THE MOVE -AN EVALUATION OF MOBILE TOURIST GUIDES", SEVENTH INTERNATIONAL CONFERENCE ON MOBILE BUSINESS, IEEE, 2008.

5. R. GOLHAR, P. VYAWAHARE," DESIGN AND IMPLEMENTATION OF ANDROID BASEMOBILE APP FOR AN INSTITUTE ", ICEEOT, INDIA,2016.

6. WILLIAM DANIELSSON, "REACT NATIVE APPLICATION, DEVELOPMENT A COMPARISON BETWEEN NATIVE ANDROID AND REACT NATIVE", LINKÖPINGS UNIVERSITET LINKÖPING, 2016.

11.
7. HTTPS://DEVELOPER.ANDROID.COM/STUDIO/FEATURES.

12. 8. BONNIE EISENMAN " LEARNING REACT NATIVE: BUILDING NATIVE MOBILE APPS WITH JAVASCRIPT",PUBLISHED BY OREILY , PRINTED IN USA, 2016.

13. 9. M. A. ACAYA , G. AMADOR, S. ELINON: "AN AUGMENTED REALITY MOBILE APPLICATION FOR THE TOURIST SPOTS IN THE PHILIPPINES FOR TRAVEL HUB PH " , PROCEEDINGS OF ,IEEE CONFERENCE 2018.

14. 10. V.JOSHI, R.GOUDAR, " SEARCHING, CATEGORIZING AND TOUR PLANNING: A NOVEL APPROACH TOWARDS E-TOURISM, " SECOND IEEE CONFERENCE RTEICT, INDIA, 2017.

15. S.LI,X.DUAN, "DEVELOPMENT AND APPLICATION OF INTELLIGENT TOUR GUIDE SYSTEM IN MOBILE TERMINAL", INTERNATIONAL CONFERENCE ON MEASURING TECHNOLOGY , MECHATRONICS AUTOMATION, CHINA2015.

The Effect of Special Exercises by Using Swedish Benches on Developing the Power and Three Attacking Skills and the CK Enzyme for Handball Players

[1]Mushreq Aziz Tunash AL-Lamiy, [2*]Hikmat Adil Aziz AL-Lami ,[3] Shahlaa Abdulhadi Lhimass AL-Zihayyim

[1] College of Physical Education and Sports Science, University of Al-Qadisiyah, Diwaniyah city, Iraq.

[2]College of Medicine, University of Al-Qadisiyah, Diwaniyah city, Iraq

[3].General directorate of education in Diwaniyah,Ministry of Education, Republic of Iraq.

*Corresponding author: (Hikmat) hikmat_sport@yahoo.com , hikmat.allami@qu.edu.iq,

Abstract:

The present study aims at preparing exercises by using Swedish benches and identifying the effects of these exercises on the power, three attacking skills (dribbling, passing and shooting) and the CK Enzyme of handball players in Diwaniyah city. The two researchers used the experimental method because it is the convenient one to work out the study problem and determined the research community in a deliberate manner. It includes 18 players of Al-Saniyah Handball Club for the younger category during the sports season (2016-2017). The eighteen players , whose heights were ± 179.2 cm, weights ± 71 kg and ages ± 17) were randomly divided into two groups. Each group contains 9 players and the experimental group was given the exercises to use the Swedish benches which are prepared by the two researchers, but the controlling group has applied the items of the training curriculum prepared by the coach. The researchers conducted power tests and some attacking skills along with measuring the CK Enzyme for the players. The current study indicates that, with only 3 units per a week, 8 weeks of Swedish bench suitably adapted exercise with and without ball by using the interval training brings forth significant enhancements in the power and some of the attacking skills and the CK Enzyme. The results demonstrated the computational and standard deviations, the dependent and independent T value of power tests (arms, legs, and abdomen), the three attacking skills (dribbling, passing, and shooting), the CK Enzyme and analyzing the difference between the experimental group and the controlling group.

The present study concludes that it is possible to depend on the exercises of Swedish benches as effective tools in developing distinctive power of some attacking skills (dribbling, passing, and shooting) and the CK Enzyme.

Keywords: Swedish Benches, Power,Attacking Skills, the CK Enzyme, Handball.

Introduction:

In the sport of Handball, as any other group sports, physical ability and high skills prompted by modern technology are required to enable the players to perform the highest level to participate in the Handball matches with its various physical, skillful and physiological requirements. However, through the variation and renewal in training methods they keep on pacing with the evolution of the game of Handball and announcing the spirit of excitement, concurrence, and agitation of its performance. Furthermore, Handball is defined as a sport where effectual execution requires incessant body contacts, and the capability to make the repeated explosive muscular contractions required for jumping, increasing speed, sprinting, turning, changing pace, and throwing a ball [(1),(2),(3),(4).] Some of the special physical abilities, like the power, which come together with strength and speed, are considered to be commonly used and have a significant role in the performance of attacking skills. They reflect the perfect performance accuracy as (dribbling, passing, and shooting) quickly after getting the ball in different defense situations or in the rapidly beginning after the pursuance of goal throw to start as fast as the opponent's team retreats by using offensive skills to score as many goals as possible. The power and the performance of important attacking skills are necessary to pay attention to them and work on their development and improvement. In addition to the role of the CK Enzyme which functions to increase the chemical reactions to rebuild the ATP by the fusion of the CP and a chemical source stored in the muscles[(5)]. Power is the greatest drive that the neuromuscular system could create in a given time. Intensive loads are essential on developing the power since high strengths are related to maximal speed unit enrollment as indicated by the principle of the size, with units additionally terminating at higher frequencies [(6), (7)]. The using of helping and appropriating tools is an important part in training; it will achieve progress in this sport and could be an important indicator to assess the efficiency of the attacking and defensive skills. The using of helping tools works on accelerating learning process and the availability of assistance tools leads to self-confidence and growing and developing physical and potential skills as well as the attendant suspense to the players through their action and moving which has a positive and effective impact for developing attacking skills [(8)]. In order to develop the players' physical ability and enhance their skills, the researchers have adopted special exercises by using the Swedish bench (physical - skill) which may participate significantly in improving the players' physical ability. Hence, that will contribute to the change in the development of the power of speed and some attacking skills (dribbling,

passing, and shooting) and the CK Enzyme, in regard of the aforementioned, Biain argues that the performance skill for any sports game basically relied on physical preparations specified in muscles power [9].According to the expert's experience, it has been found that using the Swedish bench as a training method is more effective and productive in improving the performance, speed, strength, and attacking skills and the CK Enzyme for Handball players. Therefore, the researchers find that using the Swedish bench depending on exercises on developing players' strength, speed, and attacking skills and the CK Enzyme that can achieve the target of the research. The aim of the study is to prepare exercises by using Swedish benches and to identify the effects of these exercises on the speed and some attacking skills and the CK Enzyme of Handball players in Al-diywaniyah city. The hypothesis of the research reflects the positive effect of the exercise method of using Swedish benches in the development of power and the attacking skills and the CK Enzyme for Handball players.

Procedures:

Material and Methods:

The present study has identified the experimental method as the appropriate method to solve the research problem and achieve its objectives .The experiment protocols were approved by ethical Committee of College of Medicine University of al-Qadisiyah. In addition, informed consent was obtained from all study participants prior to sample collection.

Community and study sample:

The study was identified in the research community in a deliberate manner. It includes players of Al-Saniyah Handball Club for the younger category during the sports season (2016-2017). Twenty-one players participated in this study excluding the goalkeepers. The remaining eighteen players were randomly divided into two groups. Each group contains nine players and the experimental group (whose heights were ± 179.2 cm, weights ± 71 kg and ages ± 17) was given the exercises to use the Swedish benches which were prepared by the two researchers, but the controlling group has applied the items of the training curriculum prepared by the coach.

Instruments, means and devices used in the study:

(Note - Arabic sources and references timing clocks Handballs (12) – 40 x 40 cm steel benches Handball field plastic figures 12 adhesive tape Swedish benches (No.6, made of wood, length 4 m, width 27 cm, height 35 cm - High jump device, kit to determine the level of the CK Enzyme, medical injections, plan tubes).

Tests used in the study:

1 - Testing the power of the arms: from the position of oblique position, bending and extending the arms (maximum number in 10 seconds), measurement unit (numbers) [10].

2 – Testing the power of the legs: side jump from above the Swedish bench for a period of (10 seconds), measurement unit (numbers) [11].

3 - Testing the power of the abdomen: (sit and hold) for (10 seconds), measurement unit (numbers) [12].

4 - Testing the dribbling for a distance (30 m) in a zigzag line: back and forth for (10 seconds), measurement unit (numbers of seconds) [13].

5 - Testing the speed of passing and compatibility on the wall: a distance of (4 meters) for (60 seconds), measurement unit (numbers of seconds) [8].

6- Testing the accuracy of the high jump shooting (10 balls), measurement unit (numbers) [13].

Pre-test:

The first day: on Saturday dated 6/8/2016 at 4 pm in the Diwaniyah Hall, the test of the power of the legs were conducted. Blood samples were taken from the study individuals before the test where the players at a state of complete rest without performing any physical activity. 3 cc were taken to measure the CK Enzyme. The blood samples were emptied from the syringe into special tubes allocated to preserve the blood on which the number of the player before the test. The test of the power of the legs – side jump from above the Swedish bench for a period of (10 seconds) was conducted. After that another blood samples were taken from the players via the same procedures above except these blood samples were taken five minutes after the test. On the second day Monday dated 7/8/2016, the tests of the two remaining attacking skills of Handball (arms & abdomen) were conducted with allowing sufficient rest between the tests.

On the third day, Tuesday 8/8/2016 the test of the three attacking skills (dribbling, passing & shooting) were conducted with allowing sufficient rest between the tests.

Exercises by using Swedish benches:

1. Intensity: from 75 to 95%.
2. Frequency: 3 - 6.
3. Sets 2-4 Sets.
4. Convenience: Among the duplicates: Pulse 120 - 130 BPM, rest between the drills are (2 min).
5. The load variables are from 3-1.
6. Duration: 8 weeks.
7. Training sessions: 3 units per week.
8. Intervention in the main section.
9. Exercise with and without ball (24 exercises).
10. Interval training.

- Post-test:

The post-test was conducted on the days (Saturday, Sunday & Monday) 8, 9,10 / 10/2016; the same conditions as the pre-test were taken into account.

Statistical Methods:

Statistical bag SPSS was used in this study to count the value of dependent and independent T-test.

Results:

Table (1)

Shows the computational values, the standard deviations and T value for the results of power

Changeable	Group 1	Mean	Std. Deviation	T	P
Power of the arms10 sec	Pre-test	10.22	0.97	-9.06	0.00
	Post-test	14.78	0.83		
Power of the legs 10 sec	Pre-test	12.89	0.33	-25.30	0.00
	Post-test	17.33	0.50		
power of the abdomen 10 sec	Pre-test	9.00	1.00	-16.44	0.00
	Post-test	14.56	0.53		
Dribbling 30 m	Pre-test	7.77	0.23	44.06	0.00
	Post-test	5.97	0.23		
Passing 60 sec	Pre-test	39.22	1.30	-11.07	0.00
	Post-test	47.00	1.94		
Shooting 10 balls	Pre-test	4.22	0.83	-12.00	0.00
	Post-test	8.22	0.67		

Table (1) shows value of (T); since the level of (P) is (< 0.05), then the difference is significant between the pre and post-tests in favor of the post-test.

Table (2)

Shows the computational values, the standard deviations and T value for the results of power and some attacking skills tests in pre and post-test of controlling group.

Changeable	Group 2	Mean	Std. Deviation	T	P
Power of the arms10 sec	Pre-test	10.33	0.87	-10.00	0.00
	Post-test	12.56	0.53		
Power of the legs 10 sec	Pre-test	12.67	0.50	-5.55	0.00
	Post-test	14.89	0.78		
power of the muscles of the abdomen 10 sec	Pre-test	9.22	0.83	-16.00	0.00
	Post-test	11.89	0.78		
Dribbling 30 m	Pre-test	7.91	0.19	18.07	0.00
	Post-test	6.92	0.13		
Passing 60 sec	Pre-test	38.44	1.51	-11.09	0.00
	Post-test	41.33	1.32		
Shooting 10 balls	Pre-test	4.22	0.67	-12.09	0.00
	Post-test	6.00	0.87		

Table (2) shows value of (T); since the level of (P) is (< 0.05), then the difference is significant between the pre and post-tests in favor of the post-test.

Table (3)

Shows the computational values, the standard deviations and T value for the results of power and some attacking skills tests for the experimental and controlling group.

Changeable	Groups	Mean	Std. Deviation	T	P
Power of the arms 10 sec	Group 1	14.78	0.83	6.76	0.00
	Group 2	12.56	0.53		
Power of the legs 10 sec	Group 1	17.33	0.50	7.90	0.00
	Group 2	14.89	0.78		
Power of the abdomen 10 sec	Group 1	14.56	0.53	8.49	0.00
	Group 2	11.89	0.78		
Dribbling 30 m	Group 1	5.97	0.23	-11.00	0.00
	Group 2	6.92	0.13		
Passing 60 sec	Group 1	47.00	1.94	7.25	0.00
	Group 2	41.33	1.32		
Shooting	Group 1	8.22	0.67	6.10	0.00

10 balls	Group 2	6.00	0.87		

Table (3) shows value of (T); since the level of (P) is (< 0.05); the difference is moral between the post-tests of the experimental and controlling groups in favor of the experimental group.

Table (4)

Shows the computational values, the standard deviations and T value for the pre and post-test results of measuring the CK Enzyme for the experimental group.

CK Enzyme	Group 1	Mean	Std. Deviation	T	P
Before applying the exercises	Before the Test	71.44	3.36	52.62	0.00
	After the Test	137.33	6.48		
After applying the exercises	Before the Test	91.11	3.98	49.21	0.00
	After the Test	195.00	9.54		

Table (4) shows value of (T); since the level of (P) is (< 0.05); the difference is moral in favor of the post-test before and after applying the exercises of measuring the CK Enzyme of the experimental group.

Table (5)

Shows the computational values, the standard deviations and T value for the pre and post-test results of measuring the CK Enzyme for the controlling group.

CK Enzyme	Group 2	Mean	Std. Deviation	T	P
Before conducting the exercises	Before the Test	70.78	3.99	60.86	0.00
	After the Test	135.56	6.60		
After conducting the exercises	Before the Test	82.89	4.96	55.11	0.00
	After the Test	168.56	9.53		

\Table (5) shows value of (T); since the level of (P) is (< 0.05); the difference is moral in favor of the post-test before and after applying the exercises of measuring the CK Enzyme of the controlling group.

Table (6)

Shows the computational values, the standard deviations and T value for the results of measuring the CK Enzyme for the experimental and controlling groups.

CK Enzyme			Mean	Std. Deviation	T	P
Before conducting the exercises	Group 1	After the Test	71.44	3.36	0.38	0.00
	Group 2	After the Test	70.78	3.99		
	Group 1	Before the Test	137.33	6.48	1.38	0.00
	Group 2	Before the Test	126.22	23.35		
After conducting the	Group 1	After the Test	91.11	3.98	3.97	0.00

exercises	Group 2	After the Test	80.22	7.21		
	Group 1	Before the Test	195.00	9.54	5.88	0.00
	Group 2	Before the Test	168.56	9.53		

Table (6) shows the value of (T) of measuring the CK Enzyme before applying the exercises of the controlling and experimental groups before the test; since the level of (P) is (> 0.05); then the difference is random. Also, it shows the value of (T) of measuring the CK Enzyme before applying the exercises of the controlling and experimental groups after the test; since the level of (P) is (< 0.05); then the difference is moral. In addition to that, the table shows the value of (T) of measuring the CK Enzyme after applying the exercises of the controlling and experimental groups before the test; since the level of (P) is (< 0.05); then the difference is moral. Also, it shows the value of (T) of measuring the CK Enzyme after applying the exercises of the controlling and experimental groups after the test; since the level of (P) is (< 0.05); then the difference is moral

Discussion:

The aim of this study was to assess the effectiveness of an 8-weeks Swedish bench training program as a means of improving power and maximal strength for arms, legs, and abdomen and increasing some attacking skills like dribbling, passing, shooting and the CK Enzyme as well as knowing the differences between the experimental group and the controlling group. All figures and tables reveal the computational values, standard deviations, and T dependent and independent values for the results of power tests (arms, legs, and abdomen) and some attacking skills (dribbling, passing, and shooting) and the CK Enzyme of the players of Al-Saniyah Handball Club.The findings of this study substantiate the hypothesis that the Swedish bench-training program can enhance the development of power and improving the attacking skills of dribbling, passing, shooting and the CK Enzyme. These results were significantly presented and discussed for the pre and post testing of the experimental group and the controlling group. The improvement appeared clearly in the results of the experimental group more than in the controlling group. The former investigators examined improvement of the Handball player's skills; but the present study is the first one to use the Swedish bench sport on developing the power and the attacking skills of Handball players. According to the concluded data in this study (Table 1) showed the differences in the value of power tests (arms, legs, and abdomen) and some of attacking skills (dribbling, passing, and shooting) and the CK Enzyme. The quality of samples members showed differences between two kinds of test tending to the post-test within the pre and post-test for the experimental group. Arms power test, T- value (9.06), T value of legs power (25.30), T- value of testing abdomen power (16.44). Dribbling test, T- value (40.06), T-value of testing passing (11.07) and the T value (12) to test shooting, the value of (P) (< 0.05) for all the above tests show the significant differences between the pre and the post-tests tends to post-test for experimental group.Table (2) shows the differences in the values of power tests (arms, legs, and abdomen) and some of attacking skills (dribbling, passing, and shooting) in the pre and post-test of controlling group. Therefore, the nature of samples members showed the differences between the two tests tend to post-test.In the arms power test, the T value (10) and the T value of testing legs power (5.55), the T value of testing the abdomen power [16] . Dribbling test, T value (18.07) and the T value of testing passing (11.09) and the T value (12.09) to test shooting. The (P) (< 0.05) for all the above tests shows the significant differences between the pre and the post-tests tends to post-test for controlling group. Whereas (Table 3) showed the differences in the value of power tests(arms, legs, and abdomen) and some of attacking skills (dribbling, passing, and shooting) in the post-test of controlling and experimental groups. Therefore, the nature of samples members showed the differences between the two groups tend to the experimental one.In the arms power tests, the T value (6.76) and the T value of testing legs power (7.90) and the T value of testing the power of abdomen (8.49). The T value of dribbling tests (11) and the T value of testing passing (7.25) and the value of testing shooting (6.10). The (P) (< 0.05). Therefore, the nature of samples members showed the differences between the two groups tend to the experimental one. The researchers attributed these differences between the experimental group and the controlling group of pre and post-tests to the using of Swedish benches and exercises prepared by them. This method showed how the intensity of the exercise gradually raises and then falls heavily in the exercise itself. The properties of this method are varying in the items of exercise, to link each strength to the speed with an attacking skill. The trainer, in planning the training program, focuses on improving the energy system associated with performance in the Handball sport, as well as focusing on the use of qualitative and specialized training which aims at upgrading and developing the basic skills of the sport and the muscles working during performance. To extend person execution within the team- Handball, we propose essential power training (Swedish bench, squats, and trunk rotation). [5], [14]Researchers in this study believed that players should have speed, strength and subsequently giving them the mobility to use the physical abilities of players and their role in mastering attacking skills that may have a significant role in improving their performance as well as giving their teams confidence to achieve good results in winning sports. The results of the experimental groups were showed the speed characteristic of strength in the sport play an important role as one of the physical properties of the physical components that characterize the sports activities, including the Handball shooting [15].

The results of power tests and some of the attacking skills were efficient in members of the experimental group and through the development of powers. In fact, the development of power of the arms, legs, and abdomen evolved attacking skills. In addition, the style of Swedish benches was mostly related to the arms, legs, and abdomen through their movement throughout the exercise was very numerous. Where the training characterized by a dynamic, strong, and resistant character to fatigue resulting from training, there is a positive relationship between the level of performance accuracy of Handball shooting and the most important physical fitness elements in the Handball is the power. Elite Handball players achieve some of the attacking skills than their lower-level peers. The Speed performance in some of the attacking skills improved over the present 8 weeks of training. These results seem in accord with Hermassi who noted an increase in some of attacking skills after 8 weeks of heavy resistance training, and with the improvement that has followed in 8 weeks of training. [16],[17],[18],[19].In addition, exercises were oriented to treat circumstances and requirements through the development of the most important physical abilities, speed and work to be replicated on developing them to the possible maximum extent for making the player reaches to high levels to achieve the coach goals to win sports. The exercises focusing on the power of the arms and legs lead to a high level of long attacking accuracy during the jumping of the Handball player [20].Training in the high level oriented on developing sports practices requirements to the possible maximum extent to reach the highest levels of sports. At the physical preparation period, the process of physical attributes has been linked with the increase of movement skills where the player cannot achieve the basic optimal performance of movement skills for the practice activity unless he has the necessary physical qualities required to perform the skill. For example, a Handball player cannot master the skill of attacking by jumping up or down in the event of lack of power [21].In the respect of the strength tests of speed and some of the attacking skills of the second controlling group, we observe a slight development through the adjustments that the player received from the training prepared by the coach. These skills depend primarily on physical abilities; passing is a key for the game plans and completion of the attacking process. Therefore, the different pass instruction used during the competitions must be completed in addition to the accuracy of the performance of the ball [22]. The research has been presented and discussed for the pre and post testing of the experimental group and the controlling group. The tables (4 & 5) show that there are moral differences between the level of the CK Enzyme before and after the test and before and after applying the exercises in favour of after the test for the two groups. The researchers attribute the reason behind that to the fact that one of the main functions of the enzymes is the process of expediting the chemical reactions inside the muscular cell to release the required energy for that. Therefore the function of the CK Enzyme which is restoring the ATP through oxidizing the CP. The released energy is a direct source for the energy used by the muscle in implementing the required activity. However the quantity of the ATP stored in the muscle is so little and not enough to produce an energy sufficient for a period of no more than few seconds. Thus, without the existence of ATP in the muscular cell there won't be any motion or muscular contraction [23] The process of restoring the ATP happens quickly to provide the required energy for the muscular activity that the power requires. Therefore the increase in the CK Enzyme activity is done through increasing the CK level (concentration) inside the muscular cell – which enters as a helping factor to increase the anaerobic metabolism inside the muscular cell which leads to expediting the muscular contraction and the power for the player for a specific period of time. In other words, the muscle activity is accompanied by a series of reactions in which the enzymes contribute as helping factors. This way the enzymes activity that function as helping factors increases clearly in the anaerobic metabolism due to exercising [24] . Whereas table (6) shows the percentage of the Enzyme (CK) level (concentration) before and after the test before applying the exercises. However, there were no moral differences between the two groups which means that the Enzyme (CK) level for the individuals of the study sample were within the normal limits and that there is no effect in the work of the Enzyme (CK). Also, table (6) shows that there are moral differences in the two groups in the Enzyme (CK) level before the test after applying the exercises. This shows the percentage of the increase in the Enzyme (CK) for the experimental group was very big in comparison to the controlling group. The researchers attribute the reason behind this to applying the exercises prepared by the researchers by the individuals of the experimental group which can be an indicator to the percentage of the (CP) which is formed as an essential material for the Enzyme work (function). The average of the reaction speed which is stimulated by the Enzyme is in direct proportion with the Enzyme level (concentration) when the essential material is found in abundance in the reaction perimeter[25]. In addition to the fact that the Sweden bench exercises contributed to the increase in the aerobic metabolism inside the cell like (ATP-CP). This leads to an increase in the activity of the Enzymes responsible for producing the energy and increasing the energy anaerobic reservoirs of ATP-CP where the studies proved the anaerobic exercise leads to the increase in the ATP reservoirs in a percentage of (40 – 60 %) and the reservoir of CP to (60 – 80 %) [26] In regard to the level (concentration) of the CK Enzyme after applying the exercises; table (6) shows moral differences between the two groups in the concentration percentage of this Enzyme which indicates that the increase percentage of the (CK) Enzyme in the experimental group was higher than in the controlling group. The researchers believe that this increase is normal according to the development in the players power. This indicates the fact that increasing the players power after applying the exercises results from the increase in the activity of the aerobic metabolism Enzymes along with the increase in the (CP) to which the activity of the CK Enzyme is connected. Also, regular (organized) exercising that is based on scientific foundations and all these factors contributed to developing the players ability and some attacking skills. From all that we infer that the increase in the exercising (training) status of a player is accompanied by an improvement in the internal body parts (organs). The experts in the field of the sport exercising physiology on the fact

that the bodily and the physiological adjustments – adaptations are a result of the player's following of regular and systematic training programs. In addition, it has been discovered that the activity of the CK Enzyme is %36 more after a training program of 8 weeks, so the training doesn't only increase the muscular storage from the CP only, but also increases the average of its damage. This clearly shows the extent of the pertinent interest increase out of increasing the supply and increasing the damage of the (CP) for energy production which result through suitable training programs. Therefore, the hypothesis of the research reflects the positive effect of the exercise method of using Swedish benches in the development of power and the attacking skills for

Conclusions:

Exercises by using Swedish benches contribute much to the development of the power and some of the attacking skills of Handball players. Priority in the development was for the experimental group. The exercises used the research objectives on developing the power and some attacking skills in Handball. The current study indicates that with only 3 units per week, 8 weeks of in-season Swedish benches training, with suitably adapted exercise with and without the ball, show considerable enhancements in power and some attacking skills. When the mechanisms are perceived, it may be possibly to realize even larger speed of power and some of attacking skills.

References:

1-Fieseler,G. et al. Differences in Anthropometric Characteristics in Relation to Throwing Velocity and Competitive Level in Professional Male Team Handball: A tool for Talent Profiling. J Sports Med Phys Fitness, 2017, 57: 985–992.

2-Hermassi, S. et al. Effects of In-Season Explosive Strength Training on Maximal Leg Strength, Jumping, Sprinting, and Intermittent Aerobic Performance in Male Handball Athletes. Sportverletz Sportschaden,2017, 31: 167–173.

3-Hermassi, S. et al. Effects of In-Season Circuit Training on Physical Abilities in Male Handball Players. J Strength Cond Res 7, 2017. doi: 10.1519/ AU9 JSC.0000000000002270.

4-Wagner, H, Fuchs, PX, and von Duvillard, SP. Specific Physiological and Biomechanical Performance in Elite, Sub-Elite and in Non-Elite Male Team Handball Players. J Sports Med Phys Fitness, 2018, 58: 73–81.

5-Kamal Al-Din Darwish and others: the physiological foundations of handball training, Cairo Book Center for Publishing, 1998, p. 26.

6-Behm, DG. Neuromuscular Implications and Applications of Resistance Training. J Strength Cond Res, 1995, 9: 264–274.

7-McDonagh, MJ and Davies, CT. Adaptive Response of Mammalian Skeletal Muscle to Exercise with High Loads. Eur J Appl Physiol Occup Physiol, 1984, 52: 139–155.

8-Al-Khayat, Diaa and Nouvel Al-Hayali. .Handball. Mosul: Dar al-Kutab for printing. 2001, A.P.436- B.P. 492.

9-Biain, J. Shaiky. Coach Guide to Sport Physiology: Human Training Europe. P.O. Box , W Wing Leed Leeo,Ts160-TR.UN,1986, P74.

10-Mohamed Sobhi. Measurement and Evaluation in Physical Education and Sports. C1, I 3, Cairo: Dar al-Fikr al-Arabi, 1995,P. 396.

11-Qassem, Jamil and Ahmed Khamis. World Handball Encyclopedia. Baghdad: Arabic Book House, 2011, P. 260.

12-Ahmed, Bastoisy. Foundations and Theories of Sports Training. Cairo: Dar al-Kitab al-Arabi, 1999,P.115.

13-Abbas, Emaduddin and Medhat Mahmoud. Applications of the Attack in Handball Education. Training Zagazig University, , 2007,A.P. 223- B. P. 229.

14-Darwish, Kamal El-Din and Others. Physiological Basis for Handball Training. Cairo: Book Center for Publishing, 1998, P. 29.

15-Marques M.C. "In-Season Strength and Power Training for Professional Male Team Handball Players". Strength and Conditioning Journal, 2010, 32, 74-81.

16-Abdel-Basir, Adel. Mathematical Training and Integration Between Theory and Practice, Cairo: The Book Center for Publishing, 1999,P.99.

17-Mohsen, Saad, Effect of Training Methods on developing Explosive Force for both Men and Arms in the Accuracy of Short and Long-Term Correction in Handball. PhD thesis, Faculty of Physical Education, University of Baghdad, 1996,P.107.

18-Gorostiaga, EM, et al. Effects of an Entire Season on Physical Fitness Changes in Elite Male Handball Players. Med Sci Sports Exerc, 2006, 38: 357–366.

19-Granados, C, et al. Differences in Physical Fitness and Throwing Velocity Among Elite and Amateur Female Handball Players. Int J Sports Med,2007, 28: 860– 867.

20-Hermassi, S, et al. K. Effects of 8-week In-Season Upper and Lower Limb Heavy Resistance Training on the Peak Power, Throwing Velocity, and Sprint Performance of Elite Male Handball Players. J Strength Cond Res ,2011, 25: 2424–2433.

21-Gamal El-Din, Mohamed. Effect of Developing Muscular Ability on the Skill of Shooting Down the Ball in the Handball, PhD thesis, Helwan University, Faculty of Physical Education, 1983, P. 155.

22-Darwish, Kamal Eddin, Measurement, Evaluation and Analysis of Handball Training, Cairo: The Book Center for Publishing, 2002, P. 40.

22-Tawfiq, Mohammed. Handball Education - Training - Technic, Kuwait: Dar al-Salaam Press, 1994, P. 49.
23-Mohamed Hassan and Abu El-Ela Ahmed: Physiology of Athletic Training, Cairo, Dar Al-Fikr Al-Arabi, 1984, p. 165.

24-Safaa Al-Merab: Introduction to Biochemistry, Baghdad, Dar Al-Kutub for Printing and Publishing, 1987, p. 55.

25-Talal Al-Najafi: Biochemistry, University of Mosul, Dar Al-Kutub for Printing and Publishing, 1987, p. 186.

26-Jabbar Al-Kaabi: Physiological and Chemical Foundations of Sports Training, Qatar, Qatar National Press, 2007, p. 194.

27-Muhammad Al-Qat: Jobs of Athletic Training Members, Applied Entrance, Cairo, Dar Al-Fikr Al-Arabi, 1999, p. 48.

28- Muhannad Al-Bishtawi and Ahmad Mahmoud: Physiology of Physical Training, Amman, Wael Publishing House, 2006, p. 346

The relationship between female students' physical measurements and serving accuracy in the Badminton

***Raid Mhawes Zighair*[1] *, Saleh Chuaied Hilaiel*[2]**

1. ***University of Baghdad .Iraq***
2. ***University of ThiQar, Iraq***

***Corresponding author: Zighair (mhawesraid@scbaghdad.edu.iq)**

Abstract

The research aims to recognize the relationship between the physical measurements of the second grade femalestudents of the Faculty of Physical Education and Sports Science, ThiQar University, 2018-2019 AD and the serving accuracy in *the Badminton.* The researchers used the descriptive approach with the correlations technique as it's suitable for the nature and objectives of this study. The research sample consisted of (28) secondgrade femalestudents of the Faculty of Physical Education and sports Science- ThiQar University. Some under- study physical measurements, as well as, (long- short) servingaccuracy test *in the Badminton*wasrecorded, and the correlation coefficient was calculated by using Pearson coefficient.

The most significant results referred to a moral correlation between some femalestudents' physical measurements and the *(long- short) serving accuracy in the Badminton*

Keywords : *Physical measurements, serving accuracy, Badminton*

Introduction

Excellence of different vital activities that Man practiced is one of the matters that need some basic requirements to enable the Man to perform this activity perfectly, and the more these requirements are available, the more we can progress towards the desired level and reach a higher one. The sports activity is one of the most significant characteristics of this era which in turn needs so many basic requirements whether it's a collective or individual activity. These levels differs according to the quality and quantity of the sportsactivity;however, it should be accompanied and associated with the physical,skillful,planned and psychological preparation rather than the appropriate physical measurements. The physical measurements are so important for the player as the physical growth is determined by studying the total measurements of the bodysuch as lengths, widths, and the circumferences, as well as, their relations with the physical characteristics, in addition to their great significance in forecasting that may enable Man to achieve positive results. (Al-Kashif 1987) identified the physical measurements as" The study of rules" changes" of the human body shape affected by the sports activity as this section derived from the experience of educational and biological sciences such as pathology, inheritance and biomechanics"(2:34). (Nizar Al-Talib and Mahmoud Al-Samarrai, 1981) think that the physical measurements are "the study of human body measurements including the measurements of length, weight, size, and circumference of the whole human body and of the different parts of the body" (13:236). The scientific progress in sports within the current era resulted from searching for all the new in the sports field in order to elevate to the highest levels through sports training that is compatible with the player's abilities and possibilities.

Hence the importance of studying the physical measurements which are the main pillars that should be available in training is helpful in elevating the sportive to the highest levels. The trainer with all his scientific and technical abilities can't make a champion from (a player that his body isn't compatible with the game nature). Any periods of training can't make a champion out of an unfit person….So seeking for identifying the physical characteristics of different sports games and competitions would greatly help the trainers to select the valid elements that may crown their efforts with success.

Every sports event has special physical requirements that distinguish it from any other events as it's very important to provide the fit bodies as one of the main pillars that should be available to elevate the player to the highest levels. The trainer with all his technical abilities, he can't make a champion without having special physical characteristics, and any periods or intensity of training can't make a champion out of an unfit person. Thus, seeking for knowing the physical measurements that characterize every event is essential for helping the trainers to develop the player's technical performance in order to elevate him to the highest achievement. By determining the special physical measurements, we could identify the performance changes taken place during doing the sports movements, as well as, identify and determine the body pattern.(9:23) Badminton is one of the organized sports characterized by excitement and suspense; and the player is characterized by many physical measurements and skillful abilities, as the physical measurements is greatly important or the sports field due to relating to many sports such as Badminton which is one of the sports that consist of several types of offensive skills such as (the long or short) serving that affect the matches to score points that determine the winner of the halftime or the match.Through watching the match and following the training steps of this skill, the researchers noticed that there is a weakness in the second grade female students' performance accuracy of the skill of the two kinds of serving (long- short). So the researchers high light the importance of the physical measurements and their relations with the (long- short) serving accuracy in the Badminton for the second grade female students of the Faculty of Physical Education and Sports Science, ThiQar University.

The Research Purpose

The research purpose is Identifying the relationship between the physical measurements of the second grade female students of the Faculty of Physical Education and Sports Science, ThiQar University and the (long- short) serving accuracy in the Badminton.

Research Hypothesis

There is a statistical moral relationship between the physical measurements of the second gradefemale students of the Faculty of Education and Sports Science, ThiQar University and the (long-short) serving accuracy in the Badminton.

Previous Studies

1- The study of Emad Nazim Jassim Al-Dulaimi (2005) (3) entitled 'The contribution rate of some anthropometric measurements and physical abilities to the basic skills of football players'. The study aimed to identify the relationship between some anthropometric measurements and physical abilities and the basic skills of football players, as well as, identify the contribution rate of some anthropometric measurements and the physical abilities and the basic skills. The researcher has used the descriptive approach; the sample size was about (42) players.

The most significant results were:

Confirming the linear relationship achieved in general between the anthropometric measurements and basic skills on one hand and elevating to the high level of that relationship between the physical

abilities and the basic skills on the other hand, as well as, the relationship between the anthropometric measurements and physical abilities together and the basic skills.

2-The study of Mekky Mahmoud Hussein (1989) (:11) entitled "Some physical measurements and their relationship with some elements of physical fitness of football players". The researcher has used the descriptive approach. The sample size was about (90) players.

The most significant results were: There's a moral correlation between the kinetic speed and the physical measurements, as well as, a moral correlation between the explosive force of the two legs and the chest width.

3-The study of Nabil Shaker (1990) (:12) entitled "The relationship between some physical measurements and skill tests as an indicator for selecting the football players of ages (12-15) ".The study aimed to identify the relationship between some physical measurements and physical tests and skill tests For football players, as wellas, identify the relationship between each measurement or physical test and measurements and research tests combined for each age group individually in order to adopt them as an indicator for selecting of the players. The researcher has used the descriptive approach; the sample size was about (278 players) of ages (12-15).

The most significant results were:

There's a moral correlation between the measurements and the study tests according to the strength of its statistical significance.

Research Sample:

The research was performed in the Faculty of Physical Education and Sports Science, Thi- Qar University on (28) female students in the second grade of the school year 2018/2019 AD. The research continued for a month to verify the researchHypothesis.

The researchers selected the sample of (28) femalestudents in the second grade at the Faculty of Physical Education and Sports Science- Thi- Qar University, in the school year (2018/2019 AD).

The Procedures:

The researchers couldn't determine some physical measurements related to the study subject. After reviewing the scientific sources in this field and seeking the opinion of a number of experts and specialists, the researchers adopted the physical measurements related to the study subject which are: Body weight,Total body length, Arm length, Forearm length, humerus length, Palm length, Leg length, Thigh length, shin length, humerus circumference, Chest circumference, Abdominal circumference, Thigh circumference, Shoulder width, Chest width, Pelvic width.

Physical measurements and the tests used in the research

The physical measurements and the tests used in the research were carried out on a sample of the second grade female students on the court of Badminton in the Faculty of Physical Education and Sports Science, ThiQar University as follows:

The physical measurements (5:27):

1- Body weight: The weight of the research sample was measured by using the medical balance on which thefemale student stood barefoot, wearing sports clothes, then the weight was read and registered in a special form.

2- Total body length: The measurement is taken from the standard stand position where the heels are contiguous and the arms are on both sides of the body, and the measurement is done by a graduated wall so that the calcaneus" heel bone", buttocks, the shoulder blades and the back of the head touch the graduated wall and the measurement is taken to the nearest half of centimeter.

3- **Arm length**:The measuring tape was used to measure it from the lateral apex of the Acromion process of the blade bone to the tip of the lower point in the lower phalanx of the middle finger and the elongated palm.

4-Forearm length: It was measured by using the measuring tape from the highest point in the head of the spoke bone until the bottom of the stylomastoid process of the bone itself.

5- Humerus length: The length of the humerus was measured by using themeasuring tape from the lateral edge of the acromial process to the lateral edge of the lower head of the humerus.

6 - Palm length: It was measured by using the measuring tape from the middle of the wrist to the end of the middle finger and the elongated palm.

7 - Leg length: It was measured by calculating the distance between the middle of the thigh bone head till the ground.

8 - Thigh length: It was measured by using the measuring tape from the greater trochanter of the top part of the thigh bone till the lateral edge of the middle of the knee joint.

9 - Shinlength: It was measured by using the measuring tape from the lateral edge of the middle of the knee joint till the lateral manifestation of the heel.

10- Upper arm" humerus" circumference: It was measured by using the measuring tape from the relaxation position of the arm and measuring the maximum circumference of the humerus.

11- Chest circumference: It was carried out from the stand still position of the femalestudent by rising up the arms aside. The measuringtape is put on the student's body passing from the back under the lower angle of the blade bone and from the front under the chest, then the femalestudent lowers her arms in the ordinary position of standing and the measurement was taken.

12- Abdominal circumference: It was measured by putting the measuring tape horizontally around the abdomen at the navel level; the measurement was taken by reading the indicative tape on the circumference of the abdomen.

13 - Thigh circumference: It was measured from the standing position; the feet are open with wide pelvis and tape measure so that it is horizontally from the front, and back directly below the interarticular fold of hip.

14 - Shoulder width: It was measured by:placing the arms of the dividers on the lateral apex of the acromion process of the blade bones while the player is in the standing position and the arms stretched beside the body.

15 - Chest width:the ends (Belfometer) are placed on both sides of the rib cage until it reaches the largest width of the chest.

16 - Pelvic width: It was measured by placing the arms of the dividers on the highest points of the front side of the female student's pelvic.

Tests of serving accuracy (4:44-45)

Firstly: Test of the short serving accuracy in the Badminton:

- The Purpose of the test:measuring the accuracy skill of short serving.

-The tools: racquets, strings, shuttlecock, a marked court designed for the test, and an information form.

-The performing method: The measurements of each area are as follows: area (<5>pointsfor aradius of 55.8cm from the center, (<4>points 67 cm), (<3>points 96.5) (<2>points 117 cm), and (<1>point the remaining area), as shown in shape (1).

Individual court width 5.18 doubles court width 6.10

The court length 13.40

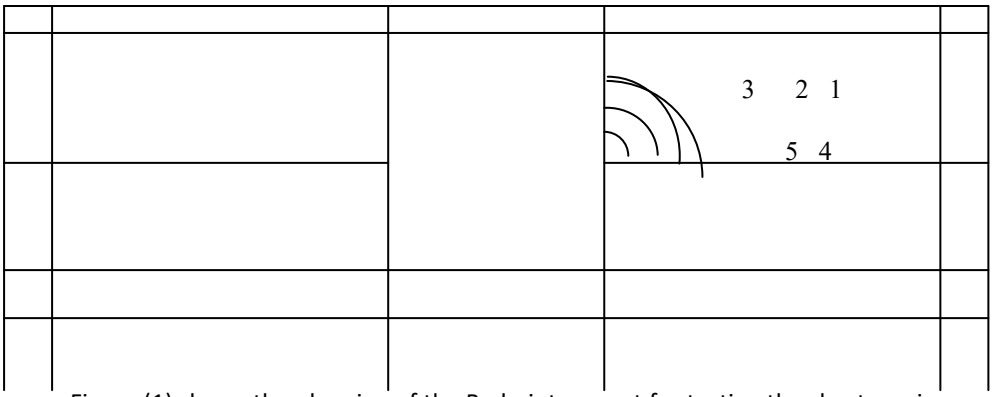


Figure (1) shows the planning of the Badmintoncourt for testing the short serving

- *Registering:* After explaining the test, a suitable time is determined for the tester to warm- up, then every tester has<5> experimental attempts.

The server stands in the serving point(x) and serves (12) attempts where the shuttlecock passes through the net and the string which is (51 cm) higher than the net, trying to cast the shuttlecock into the highest point area, the best (10) attempts are counted.

-Scoring

The points werecounted according to the cast point of the shuttlecock. When the shuttlecock is cast on the line between two areas, the highest point is counted, and the serving that doesn't pass through the string and the net and doesn't cast on any area is counted zero, and the serving that hits the string, would be replayed. The final points are the total points of the (10) attempts.

Secondly: Test of the long serving accuracy in the Badminton:

- The Purpose of the test: measuring the accuracy skill of long serving.

-The tools: a shuttlecock court, three racquets, shuttlecock, a measuring tape, an information form, duct tape, and a string fixed by pillars.

-The performing method: - ***A):*** After explaining the test, a suitable time is determined for the tester to warm- up, then every tester has<5> experimental attempts.

B)The tester stands in the marked point(x).

C)The tester serves highly and long where the shuttlecock passes above the net and the string, trying to cast the shuttlecock into the marked point area.

D) The tester has (12) attempts, the best (10) attempts are counted.

-Scoring

A) The tester has (5) points if the shuttlecocks is cast on the area marked by (4.5) cm outside the back boundary over than (40) cm inside the court boundaries, directly after the back line of the court.

B) The tester has (4, 3, 2) points, if the shuttlecock is cast on the areas marked by (40) cm,successively after the (5 points) area.

C) The tester has (1) point, if the shuttlecock is cast on the area marked by (175) cm, starting with the end of area (2) till the imaginary line under the string.

D) A point is subtracted for every attempt where the shuttlecock doesn't pass over the string.

E) If the shuttlecock is cast on the line between two areas, the highest point will be counted.

F) If the shuttlecock is cast outside the court boundaries (except the marked area) or hanged on the net, no point is counted.

G) The highest points that the tester scores within the best (10) attempts, would be (50) points.

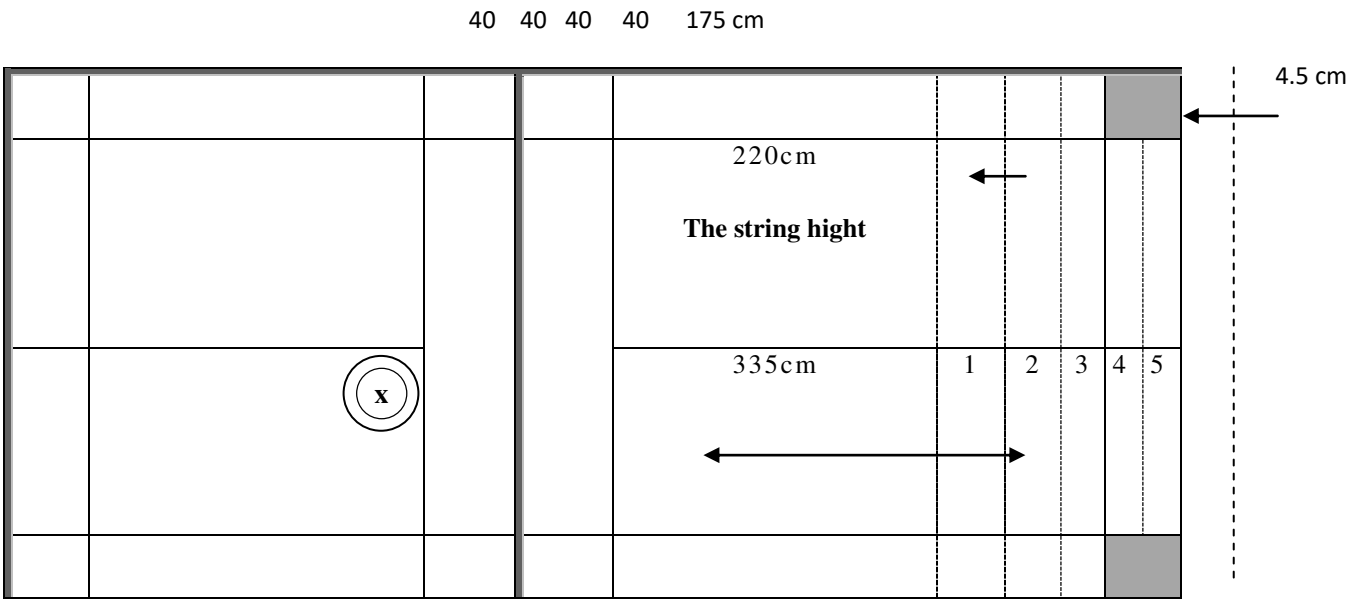


Figure (2) shows the planning of the Badminton court for testing the long serving

The Results

Table (1)

It shows the arithmetic mean, the standard deviations and the value of the simple correlation coefficient between some physical measurements and the accuracy of the short serving in the Badminton for female students.

Statistical significance	The calculated value of thecorrelation coefficient	standard deviations ±E	arithmetic mean S	Serving type	standard deviations ±E	arithmetic mean S	Measuring unit	Physical measurements
moral	0.66	3.55	15.41	Short	4.38	54.23	Kg	Body weight
moral	0.53	5.18	18.23	Long				
moral	0.71	3.55	15.41	Short	3.35	162.27	cm	Total body length
moral	0.68	5.18	18.23	Long				
moral	0.76	3.55	15.41	Short	2.12	70.04	cm	Arm length
moral	0.55	5.18	18.23	Long				
Non-moral	0.32	3.55	15.41	Short	1.97	26.34	cm	Forearm length
Non-moral	0.33	5.18	18.23	Long				
moral	0.51	3.55	15.41	Short	1.58	33.16	cm	Upper arm/Humerus length
moral	0.48	5.18	18.23	Long				
Non-moral	0.30	3.55	15.41	Short	0.69	19.11	cm	Palm length
Non-moral	0.35	5.18	18.23	Long				
Non-moral	0.34	3.55	15.41	Short	3.15	98.21	cm	Leg length
Non-moral	0.32	5.18	18.23	Long				
Non-moral	0.30	3.55	15.41	Short	2.04	48.52	cm	Thigh length
Non-moral	0.31	5.18	18.23	Long				
Non-moral	0.35	3.55	15.41	Short	2.17	45.01	cm	shin length
Non-moral	0.31	5.18	18.23	Long				

Non-moral	0.33	3.55	15.41	Short	1.17	28.31	cm	Upper arm circumference
Non-moral	0.29	5.18	18.23	Long				
moral	0.53	3.55	15.41	Short	2.19	89.28	cm	Chest circumference
moral	0.58	5.18	18.23	Long				
Non-moral	0.32	3.55	15.41	Short	2.71	78.37	cm	Abdominal circumference
Non-moral	0.35	5.18	18.23	Long				
Non-moral	0.27	3.55	15.41	Short	3.05	55.68	cm	Thigh circumference
Non-moral	0.29	5.18	18.23	Long				
moral	0.49	3.55	15.41	Short	2.34	38.21	cm	- Shoulder width
moral	0.44	5.18	18.23	Long				
moral	0.51	3.55	15.41	Short	1.89	28.33	cm	- Chest width
moral	0.58	5.18	18.23	Long				
Non-moral	0.30	3.55	15.41	Short	1.83	35.06	cm	Pelvic width
Non-moral	0.28	5.18	18.23	Long				

The tabulated value of thecorrelation coefficient *is (0.374), under the significance level (0.05), free degree is (26).

The table shows that arithmetic mean values of the under study physical measurements were successively:(54.23, 162.27,70.04,26.34,33.16,19.11,98.21,48.52,45.01,28.31,89.28,78.37, 55.68, 38.21, 28.33, and 35.06).

Thestandard deviations were successively: (4.38, 3.35, 2.12, 1.97, 1.58, 0.69, 3.15, 2.04, 2.17, 1.17, 2.19, 3.05, 2.34, 1.89, and 1.83).The Arithmetical means value of the test of the short serving accuracy of the Badminton (15.41) and the standard deviation (3.55). But the simple correlation coefficients between some physical measurements and the accuracy of the short serving in the Badminton for female students were successively (0.66, 0.71, 0.76, 0.32, 0.51, 0.30, 0.34, 0.30, 0.35, 0.33, 0.35, 0.32, 0.27, 0.49, 0.51, and 0.30). The under statistical significant was (0.05); the degree of freedom was (26). Thus, we notice that there's a moral correlation between some physical measurements of the body; Body weight - Total body length - Arm length - Forearm length - Humerus length - Palm length, Leg length , Thigh length , shin length , Upper arm circumference , Chest circumference , Abdominal circumference , Thigh circumference , Shoulder width - Chest width) and the short serving accuracy of the female students in the Badminton because the calculated (r) value is greater than the tabulated(r) value by(0.374).

We also note that there is a immoral and non-significant correlation between some physical measurements (forearm length, palm length, leg length, thigh length, shin length, humerus circumference, abdominal circumference, thigh circumference, pelvic width) and accuracy of short serving in the Badminton to female students because the calculated value (r) is less than the tabulated value (t) by (0.374).

4-2 Discussing the Results

The results of table (1) show that there are moral correlations between some physical measurements (such as body weight, total body length, arm length, humerus length, chest circumference, shoulder width and chest width) and accuracy of (short-long) servingof the female studentsin the Badminton if the calculated value(r)is greater than the tabulated value (r) at the significance level of (0.05) and the degree of freedom (26); it refers to that these measurements plays an important role in the offensive skills of the Badminton such as the two types of serving(long- short) which is one of the basic skills that has an important role in the result whether winning or losing the match. Thus, every type of sports activities and skills, such as the serving skill in Badminton, need special physical measurements that may elevate the player to the highest levels. So the body should fit the practiced activity as we can't set a record and high levels in a specified activity without providing measurements that fit the requirements of this activity and its skills; as the kinds of bodies and their fitness to every activity have an important role in elevating the sports level to the top (10:159). Both ResanKhreibat and ThaerDawood (1982) pointed out that body lengths are of great importance to Racket games players as it is one of the most frequently used parts of the body in the serving skill, as well as, their notable role in other many sports activities (1:418).Al-Wailili (1989) also pointed out that physical measurements are of great importance in racket games in terms of the ability to control the instrument (322 6) as the physical formation, in terms of stability, height, weight and bodyhoists, is one of the most important factors that determine the sports skill and enable the individual to reach the highest sports levels (7:82).

Meanwhile, Resan Khreibat and Thaer Dawood (1982) pointed out that the width measurements are of great importance to basketball, volleyball, racket games and handball, as they proved that the racket games players are characterized by body and arm length (1:322). This achieved the research hypothesis of a moral correlation between some physical measurements and the serving (short-long) accuracy in the badminton.

Conclusions:

1-There's a moral correlation between the female students' physical measurements(Body weight , Total body length , Arm length , Forearm length , Humerus length - Palm length, Chest circumference, Shoulder width - Chest width) and the (long- short) serving accuracy in the Badminton.

2- There's an immoral correlation between the female students' physical measurements (Forearmlength, Thigh length, shin length, Humerus circumference, abdominal circumference, Thigh circumference, Pelvic width) and the (long- short) serving accuracy in the Badminton.

Recommendations:

1-It's necessary to inform trainers and specialists in the education and training of badminton on the results of the research and the studies to get benefit from them in the field of sports selection.

2-Developing physical and skill capabilities and physical measurements related to the physical pattern of the badminton players.

3- Performing similar researches and studies in games and other skills.

References:

1- ResanKhreibat and ThaerDawood: Methods of Designing tests and measurements cards in the Physical Education, Al-Basra University, Dar Al-Hekma, 1982, p: 418.

2- Ezzat Mahmoud Al-Kashif: Physical Measurements in Sports Activities, Cairo, Olympic Magazine, 1987, p: 34.

3-EmadNazimJassem Al-Dulaimi:Contribution Rate of some anthropometric measurements and physical abilities of the basic skills of football players, Ph.D. Thesis, Unpublished, Faculty of Physical Education, University of Baghdad, 2002.

4-MazenHadiKazar: Effects of mental , physical, and skillful training on the accuracy and speed of the Kinetic response of badminton players, Master's Thesis, Babylon University, Faculty of Physical Education, 2003, p: 44-45.

5-Mohamed Ibrahim Shehata and Mohamed Gaber Burqa :The guide of physical measurements and tests of kinetic performance, part 1, Alexandria, Monshaat Al-Maerf in Alexandria, no year, p: 27.

6- MohammedTawfiq Al-Waili:Racket Games, Education, Training, Technique,Kuwait, Al-Salam Press, 1989, p: 322.

7- Mohammed Hassan Allawi: Science of sports training, 6 e, Cairo, Dar al-Maaref, 1979, p: 82.

8-Mohamed SobhyHassanein: Evaluation and Measurement in Physical Education, 2nd edition, Cairo, Dar Al-Fikr Al-Arabi, 1987, p: 44.

9- Mohammed Nasr al-Din Radwan: The reference in physical measurements, 1e, Cairo, Dar AL-Fikr Al- Arab, 1997, p: 23.

10-Marwan Abdul Majeed Ibrahim: Tests, Measurement and Evaluation in Physical Education and Sports, University of Mosul, Dar Al-Kutubfor Printing and Publishing, 1981, p: 159.

11-Mekky Mahmoud Hussein: Some Physical Measurements and their Relationship with Some Physical Fitness Elements of Football Players, Master Thesis, Faculty of Physical Education, Mosul University, 1989.

12-Nabil Mahmoud Shaker: The relationship between some physical measurements and skill tests as an indicator for the selection of football players of ages (12-15), Master Thesis, Faculty of Physical Education, University of Basra, 1990.

13-Nizar Al-Talib and Mahmoud Al-Samarrai: Principles of Statistics and Tests in Physical Education and Sports, Mosul University, Dar Al-Kutub for Printing and Publishing, 1981, p: 236.

The effect of an educational program with visual effects on the development of perceptual, motor compatibility and accuracy of basketball shooting for deaf students

Riad JumaaHassan [1] , Hamid Nori Ali [1] Ali Khoman Alwan[1]

1. Qadisiyah University – Faculty of Physical Education and Sports Sciences

***Corresponding author: Assistant Professor Hassan (Email: dr.riad2011@yahoo.com**

Summary

The aim of the research to identify the effect of the educational program with visual effects in the development of perceptual perception, motor compatibility and accuracy of basketball shooting for people with hearing disabilities, and the researchers used the experimental method with the experimental design of a sample of (16) students divided equally into two experimental and controlled groups representing the Institute of Al amal, The researchers used scientific research tools, appropriate tools and devices, conducted a mini-reconnaissance experiment and then conducted a pre-test and the application of educational units that lasted (8) weeks, and three units per week, and after the completion of the implementation of the method were conducted after the dimensional tests were carried out The data was extracted and processed statistically and then presented, analyzed and discussed, and the researchers came up with several conclusions, the most important of which is that the use of visual effects in educational units effectively influenced the development of sensory perception, motor compatibility and accuracy of basketball shooting in the members of the experimental group, Also visual effects play a role in the purification of the performance skills and the development of accuracy as it provided opportunities for the student to realize the distance of performance and time, which led the player to correct the performance and keep away from mistakes, i.e. the researchers recommended the need to emphasize the introduction of visual effects in The educational curriculum for students with hearing disabilities basketball and the development of mental processes and motor compatibility, as well as emphasizing the adoption of these effects in the exercises of the hearing impaired to develop the motor compatibility in a way that coincides and develop the accuracy of the performance of basic skills basketball.

Introduction

Basketball of group games that are characterized by the availability of several abilities including physical, motor, mental, skill and others, which have a big and important role in achieving the best ideal performance for players, has developed the level of technical performance and accuracy of the skills of this game, including the skill of shooting, which requires From the players and coaches in the training process take into account a lot of abilities and requirements that contribute to the continued development and of these abilities is the sensory perception of the importance of this ability in the way the player deals with the ball or with the opposing player and the fellow player, as well as his sense of where to implement skill, time and strength, As well as the availability of motor compatibility, as one of the requirements of playing basketball is to deal with different situations of play with fast and sound thinking, which requires players to possess perceptual perception, as perceptual-kinetic and motor compatibility plays an active role in the proper application of the

performance of their skills in parts different body, because the processes of sensation and cognition depend on the accumulation of experience and information through theoretical knowledge and practice that leads to the isolation of insignificant stimuli and the acquisition of good compatibility, which qualifies the player to achieve the best performance in the skill of shooting.

Visual effects are an important learning tool that depends on the sense of sight as the main source of learning, through which direct sensory experiences are acquired. It also enables the learner to understand and interpret events visually, which positively affect aspects of his learning and communication with others, and increases the importance of the use of visual effects for individuals with hearing disabilities as it is one of the components of the effectiveness of the visual product in particular and the educational attitude in general, as it contributes In the process of organizing the knowledge structure in the memory of the learner and this process is evident by the linking of the old information stored in memory and the new related, and that this organization is a key to retrieving information from the memory of the learner and using it in educational situations and that all of this contributes to the provision of Time and effort, improving the quality and continuity of learning and raising the motivation of the learner to learn it in order to achieve the desired goals.

The refore, the importance of research is reflected in the use of visual effects by the educational program and its experimentation with a group of hearing disabilities to see how it affects by developing the level of perception, motor compatibility and accuracy that must be enjoyed when performing basketball shooting.

Research Problem:

Through the observation and experience experienced by the researchers in the game of basketball, they found clear importance in studying the levels of perception, motor compatibility and accuracy of correction in students of the Institute of Al amal for Hearing Impairment, and this was the result of the lack of introduction or use of educational methods that work to develop these abilities, since most of the exercises may lack these means, as well as their implementation is either by balls or by almost normal means, which is less useful, which is to develop the student's sense of awareness of the surroundings in which he works, as well as a weakness in the player's motor compatibility with the lack of arousal and his motivation towards the training process,

The idea of research or study was an attempt to highlight the importance of educational means or their introduction in the training process, particularly with students of the Al Amal Institutes of Auditory Impairment, which is important in developing the accuracy of the skilled performance of correction, which depends largely on sensory perception and motor compatibility.

1.3 Research Objectives:

1-Preparing an educational program with visual effects in the development of perceptual perception, motor compatibility and accuracy of basketball correction for deaf students

2-Knowing the impact of the educational program with visual effects in the development of perceptual perception and motor compatibility of deaf students

3-The impact of an educational program with visual effects on the accuracy of basketball shooting for deaf students

1.4 Research hypotheses:

1-The educational program has a positive impact on the development of perceptual and motor compatibility for students with hearing impairment

2-The educational program has a positive impact in the development of the accuracy of basketball shooting for students with hearing impairment

:1.5 Research Areas

1-5-1 Human field: - Students of the Institute of Al Amal (14-16) year-olds of the sixth stage.

1-5-2 Timedomain: - Duration from 1/4/2018 until 3/6/2018.

1-5-3 Spatial field: - Sports stadiums at The Institute of Al Amal.

3-Research methodology and field procedures:

3-1Research Methodology:

The researcher adopted the experimental approach by designing equal groups to suit the nature of the research.

3-2 Research community and sample:

The research community is made up of 30 students and 14-16 years of age, and 16 students were selected to represent the research sample, which was divided equally into two control and experimental groups, with the percentage of the research sample being 53.333%.

3-3The homogeneity of the sample and the parity of the two research groups:

3.3.1 The homogeneity of the sample members: - Researchers performed the homogeneity of the members of the sample in the light of the following variables (time age, length and weight - state of hearing), in order to adjust the research variables as shown in table (1).

Table (1) Shows arithmetic media, standard deviations, patterns and torsion coefficient for the homogeneity of the research sample

Torsion coefficient	Pattern	standard deviation	arithmetic media	Variables
0.19	15	0.54	14.56	Lifetime / Year
0.86	166	4	167.86	Length / cm.
0.54	67	3	68.6	Weight / kg
All students have a hearing loss higher than 70 dB				Degree of hearing

from (±2) this .The results of Table (1) show that the values of the torsion coefficient range indicates that the data are free from defects of non-moderate distributions, ie, the homogeneity of the research sample.

3-3-2 Equality of the two research groups:

Prior to the application of the research experiment, the researchers conducted the equivalence of the two research groups in some of the tests under investigation as shown in Table (2).

Table (2) shows the arithmetic media, standard deviations and test results (t) calculated between the control and experimental groups in some of the pretest tests in question.

Type of significance	Value (t) Calculated	Experimental		Control		Statistical parameters Variables
		ع	س-	ع	س-	
Non - moral	0.22	1.86	3.88	1.89	4.04	Perceptual perceptionby throwing the ball / number
Non - moral	1.12	0.13	0.68	0.13	0.75	Perceptual time / sec
Non - moral	0.52	1.28	8.08	2.41	7.25	Compatibility between the eye and the legs / sec
Non - moral	0.22	1.44	8.22	1.34	8.86	Compatibility between eye and arm / number
Non - moral	0.32	1.21	3.58	1.12	3.88	Aiming of free throw / number

The results of Table (2) show that the calculated (t) values are smaller than their tabular value of (2.16) at the level of (0.05) and below the degree of freedom (14), which indicates the equivalence of the two research groups in some tests under consideration.

3-4 Used devices and tools

3.4.1 Research Methods:

The researchers used the following research methods (Arab and foreign sources, tests, measurement, observation, interview and questionnaire).

3.4.2 Tools and Equipment

The researchers used the following tools and equipment (measuring tape, adhesive tape, eye ring, legal basket balls (15), people, flags, stopwatch (3), multiple cords, weight measuring device, manual electronic calculator, camera, CD, laptop).

3.5 Determining Search Variables:

3.5.1 Educational means

After reviewing the scientific sources and research related to basketball and sports training where (static images - serial images - video - models display - computer - Datacho) were selected as the most suitable visual effects to achieve the goal of research, the main objective is to develop perceptual and motor compatibility and accuracy of correction (The reason for choosing this skill is the love of

competition and the desire to learn and the increase in scoring is what prompted researchers to choose the skill being motivating and arouse the desire to learn)

3.5.2 Devices and Tools

Tools-:

1-Basketball Court 2 - Basketball (10) 3 - Person (15)

4-stationery, chalk 5 - tape metric measurement (50) m

5-CDs (4) 6 - Flash memory (8 GB) number(1)

7-Flags (4)

-Hardware:

-Sony (1)

-Display data show -Lenonvo laptop computer-

-Electronic stopwatch number (4) - Medical balance to measure the number of mass (1)

-Medical ball weight (2) kg (2)

3.5.2 Tests of perception, motor compatibility and accuracy of basketball correction: - A selection of skill tests for basketball, perception and motor compatibility have been selected. These tests are approved and used by several researchers in this field.

First: - Perceptual tests.

A- perception test by throwing the ball.

B - perception of time perception.

C- Horizontal distance perception test.

d-Perceptual perpendicular distance.

-Second: Motor compatibility tests.

A - Test throwing the tennis ball on the wall and receiving it.

B - Test numbered circuits.

Third: - Tests accuracy of the forms of correction basketball.

A- free-throw test

3.6 Exploratory experience:

The researchers conducted a mini exploratory experiment on a group of the sample of the Institute (4) students and outside the basic research sample on 4/4/2018, with the help of the signal teacher at the Institute has conducted this experiment for several purposes, including:

1-Ensure the accuracy of data recording .

2-Know the difficulties facing the tests and the possibility of avoiding them.

3-Know the suitability of the devices and tools necessary to perform the tests.

4-Know the time taken to take the tests.

5-Ensure the team's understanding of the nature of the tests and how to perform them.

6-Find the scientific basis for the tests.

:3.7 Scientific basis for the tests

-Mohamed Ibrahim Shehata and Mohamed Gaber Bareeqa. Directory of Body Measurements and motor Performance Tests, Alexandria, El Maaref Establishment, 1998, p. 140.

-Mohammed Ali Abu al-Keshk and Mazen Rizk Hatamleh. The effect of mental training accompanying the skill training on the development of some perceptual-motor variables on the ground movements of the students of the Faculty of Physical Education, Journal of Studies and Research Physical Education, the sixth issue, 1996, p. 26.

-Ali Hussein Hashem, Physiological and motor Guides in Sports Psychology, Qadisiyah, 2010, p. 71.

-Amer Jabbar Al-Saadi, Design and Standardization of perceptual Tests for Volleyball Players, Journal of Physical Education, University of Baghdad, College of Physical Education, 2002, p. 116.

-Mohamed Sobhy Hassanein, Measurement and Evaluation in Physical and Sports Education, 3rd floor, Cairo, Dar Al-Fikr Al-Arabi, 1995, p. 415.

-Mohammed Sobhi Hassanein, ibid., P. 416.

-Mahmoud Abdel Dayem and Mohammed Sobhi Hassanein. Ibid., P. 130—131.

Although the physical, motor and skill tests used in the research are codified, the researchers sought to adopt the scientific basis in the evaluation of the tests by finding the coefficients of honesty and stability of the tests.

•Logical honesty:

Honesty is one of the most important conditions of good testing and honesty means "the test should be able to measure the attribute, phenomenon or attribute for which it was developed" (^). Who acknowledged the validity of its use and to achieve the goal of research.

•Stability

Stability means "the degree of accuracy or agreement by which the test measures the phenomenon for which it was established." Stability coefficient was found for the motor and skill tests of the skills under study by applying them to a sample of (6) students (4) hearing impaired and (2) deaf from the research community and outside the main research sample and after (7) days Re-test on the same sample and under the same conditions.

Table (3) shows the scientific coefficients of the tests under consideration

Objectivity	Stability Coefficient	Honesty Coefficient		Statistical parameter Tests
		not fit	Fit	
0.88	0.94	0	5	Perceptual perception throwing the ball
0.89	0.94	0	5	Time Perception
0.88	0.89	0	5	Horizontal Distance Perception
0.92	0.84	0	5	Perceptual perpendicular distance
0.89	0.88	0	5	Compatibility between the eye and the legs
0.93	0.94	0	5	Compatibility between the eye and the arm
-	0.92	0	5	Shooting from the free throw

•1-Ali, Soraya Ahmed Mahmoud (2000): the impact of the use of some still images on the achievement of educational objectives of the competition shot put deaf and mute, unpublished doctoral dissertation, Faculty of Physical Education for Girls, Alexandria University.

2-Allawi, Mohammed Hassan, and Radwan, Mohammed Nasruddin (2001): tests of motor performance, Dar al-Fikr al-Arabi, Cairo.

3.8 Field research procedures

3.8.1 PreTests

The pre-tests of the research sample were conducted on 24/4/2018, in the yard of Al Amal Sports Institute, with the assistance of the assistant team

3.8.2 Implement the vocabulary of training means

-The experimental group of educational means was subjected to the implementation and application of skill and motor exercises by the researcher.

-The control group followed the method adopted by the institute, and the researchers' duty was to supervise and follow up the field to implement the vocabulary of the units without intervention.

-The training curriculum took (8) weeks, with three teaching units per week, bringing the total number of teaching units (24) units.

-Unit time (60) minutes (Appendix 3) some exercises unit

3.8.3 post tests:

The post-test of the experimental and control groups was conducted under the same conditions as the pretest tests of these two skills. These tests were conducted on 2/6/2018.

3.9 Statistical means: - Statistical means included:

1-Arithmetic mean

2-Standard deviation

3-Torsion coefficient

4-Simple correlation coefficient (Pearson)

5- Percentage

6-Two-way contrast analysis by interaction.

7-Test "T" for two samples of equal number

8- Test "T" for two unrelated samples is equal to the number.

4.Presentation, analysis and discussion of results

4.1View the results of perceptual perception tests, motor compatibility and accuracy of basketball shooting for the control and experimental research groups and analysis

4.1.1View the results of perceptual perception tests, motor compatibility and accuracy of basketball shooting for the control research groups and analysis

Table (4) shows the arithmetic media, the standard deviations and the value (t) calculated between the pre- and post-tests
In perceptual perception and motor compatibility tests of controlresearch group

significance type	Value (t) Calculated	Post-tests		Pre-tests		Statistical parameters Variants
		ع	س-	ع	س-	
Moral	3.11	1.28	6.82	1.89	4.04	perceptual perception by throwing the ball / number
Moral	2.94	0.89	0.51	0.13	0.75	Perceptual in time / s
Moral	3.42	1.22	5.82	2.41	7.25	perceptual perception in horizontal distance / degree
Moral	2.86	0.80	5.98	1.34	8.86	Perceptual perpendicular distance / degree
Moral	3.28	1.17	8.33	1.12	3.88	Compatibility between the eye and the arm / number
Moral	2.92	0.89	6.32	1.89	4.04	Compatibility between the eye and legs / s

The results of Table (4) showed that the values of (t) calculated between the pre- and post-tests in the perceptual perception and motor. Compatibility tests of the control group were greater than their tabular value of (2.45) at the significance level (0.05) and under the degree of freedom (7). Indicates the presence of significant differences between the pre- and post-tests and in favor of the dimension.

Table (5) shows the arithmetic media, the standard deviations and the value (t) calculated between the pre and post tests

In tests of basketball Scoring forms for the control group

significance type	Value (t) Calculated	Post-tests		Pre-tests		Statistical parameters Variants
		ع	س-	ع	س-	
Morale	3.21	1.12	5.44	1.24	2.63	Correction from free throw

The results of Table (5) showed that the values of (t) calculated between the pre- and post-tests in the basketball corrections tests of the control group, are greater than their tabular value of (2.45) at the significance level (0.05) and under the degree of freedom (7). On the existence of significant differences between the pre and post tests and in favor of the pretests.

4.1.2 View the results of perceptual perception tests, motor compatibility and accuracy of basketball shooting for the experimental research groups and analysis

Table (6) shows the arithmetic media, the standard deviations and the value (t) calculated between the pre- and post-tests in the perceptual perception and motor compatibility tests of the experimental research group

significance type	Value (t) Calculated	Post-tests		Pre-tests		Statistical parameters Variants
		ع	س-	ع	س-	
moral	3.78	1.15	6.34	1.86	3.88	perceptual perception throwing the ball / number
moral	5.29	0.12	0.48	0.13	0.68	Perceptual time / sec
moral	6.12	0.95	3.78	1.28	8.08	perceptual perception of horizontal distance / degree
moral	4.76	0.76	2.21	1.44	8.22	Perceptual perpendicular distance / degree
moral	4.08	1.25	9.78	1.21	3.58	Compatibility between the eye and the arm / number
moral	4.54	0.34	5.43	1.86	3.88	Compatibility between the eye and the legs / s

The results of Table (6) showed that the values of (t) calculated between the pre- and post-tests in the perceptual perception and motor compatibility tests of the experimental research group are greater than their tabular value of (2.45) at the significance level (0.05) and under the degree of freedom (7). On the existence of significant differences between the pre and post tests and in favor of the post tests.

Table (7) shows the arithmetic media, the standard deviations and the value (t) calculated between the pre- and post-tests In the basketball shooter tests for the experimental research group

significance type	Value (t) Calculated	Post-tests		Pre-tests		Statistical parameters Variants
		ع	-س	ع	-س	
Morale	5.44	1.14	8.32	1.27	3.59	Correction from free throw

The results of Table (7) showed that the values of (t) calculated between the pre- and post-tests in the tests of basketball corrections forms for the experimental research group, are greater than their tabular value of (2.45) at the significance level (0.05) and below the degree of freedom (7). On the existence of significant differences between the pre and post tests and in favor of the dimension.

4.1.3 View the results of tests of the perceptual perception, motor compatibility tests and accuracy of thepost basketball corrections between the control and experimental groups

Table (8) shows the arithmetic mean, standard deviations and the value (t) calculated in the post perceptual perception and motor compatibility tests between control and experimental groups

significance type	value (t) Calculated	Experimental		control		Statistical parameters variables
		ع	-س	ع	-س	
Moral	3.11	1.15	6.34	1.28	6.82	perceptual perception by throwing the ball / number
Moral	3.71	0.12	0.48	0.89	0.51	Perceptual in time / s
Moral	2.72	0.95	3.78	1.22	5.82	perception per horizontal distance / degree
Moral	3.49	0.76	2.21	0.80	5.98	Perceptual perpendicular distance / degree
Moral	4.65	1.25	9.78	1.17	8.33	Compatibility between the eye and the arm / number
Moral	4.04	0.34	5.43	0.89	6.32	Compatibility between the eye and the legs / sec

The results of Table (8) showed that the values of (t) calculated between the control and experimental groups in the post tests of perceptual perception and motor compatibility, is greater than its tabular value of (2.45) at the level of significance (0.05) and the degree of freedom (14), and this indicates On the existence of significant differences between the pre and post tests and in favor of the post.

Table (9) shows the arithmetic media, the standard deviations and the value (t) calculated in the accuracy of the corrections post basketball between control and experimental groups

significance type	value (t) Calculated	Experimental		control		Statistical parameters variables
		ع	-س	ع	-س	
Morale	3.06	1.14	8.32	1.12	5.44	Correction of free throw / number

4.2 Discussion of the results:

Through the results presented in the tables (7,6,5,4) for the tests of perception and motor compatibility and the accuracy of a basketball correction and for the control and experimental research groups, which showed the existence of significant differences in favor of post-tests for both groups, the researchers attribute the reason for these differences for the group Control of the impact of the curriculum adopted in the curriculum of physical education of the Ministry, as well as the commitment of students and regular attendance and continuing to perform the skill and repetition had a clear role in their development in the variables researched, as sources stressed that "the many repetitions practiced by the player during the Practical application helps to gain performance and scalability. " As well as the skill of aiming in basketball are important offensive skills, as the injury of the basket is the final outcome of the performance, and the decisive factor in determining the results of the game, which prompted members of the control group to commit to all the time of the lesson to get accurate scoring.

As for the experimental group whose teaching methods have been introduced, the researchers attribute the moral differences that occurred between the pre- and post-test tests to the existence of sufficient scope to teach and improve the perception, motor compatibility and accuracy of correction through the use of training and teaching means in the educational units in accordance with the special possibilities of students in the development. Their awareness of distance, time or space within the stadium, as well as the development of motor compatibility among members of this group, which has a clear impact in the development of technical performance and accuracy because "aesthetic performance and its development depends on the development of processes Perception of the result of the players undergo exercises with training means

The development of these abilities, which leads to the development of his sense of the ball because of the strength of neurological processes, which results in increased perception of the external environment.

The results of tables (9,8) also indicated the existence of significant differences in the distance tests between the control and experimental research groups and showed the superiority of the experimental group and the researchers attribute this to the effect of the teaching and training methods introduced in the training units, which contributed to the development of perceptual perception, which in turn led To the success of the student in his skill performance, as "the sense of motor lead to the athlete to succeed in his movements, and gives the ability to discover the new tactic, and the ability of motor compatibility." In addition, perceptual perception has a direct impact on the development of skill performance and accuracy and the acquisition of new skills, as well as play situations, especially when scoring need to sense of touch and sight, and some internal sensations such as sense of direction and distance and a sense of time more than any other sense, which provided players with broad horizons in Recognize the largest range of variables surrounding performance.

The results also showed the superiority of the experimental group and clearly in the tests of motor compatibility and this is what the teaching methods that develop motor compatibility through which is associated with many other physical and motor abilities such as speed, agility, balance and accuracy, as "the link shows the compatibility of speed in the requirements of motor performance in terms of Agility, balance and accuracy of movement requirements, both spatially and formally, ie moving the body and its parts with the precision required during a vacuum.

In the results of the accuracy of the basketball correction we find that the experimental group has also excelled and researchers attribute the reason for that correction is one of the motor skills that require great accuracy in training, and that their performance requires high coordination of mental and motor and neuromuscular compatibility and precision, This has clearly demonstrated the role of teaching aids in the accuracy of the performance of the players in this group because accuracy is "an important requirement depends on winning, it is the desired goal in the performance to score points, if measured by the outcome of the rapid performance of the strong performance is useless if lack of accuracy." This is what the researcher went to fulfill his hypotheses.

5. Conclusions and recommendations:

5.1 Conclusions

1. The use of teaching and training means in the units effectively influenced the development of perceptual perception, motor compatibility and accuracy of basketball correction among the members of the experimental group.

2. The curriculum prepared by the teacher of the Institute has a positive role and significantly in the development of perceptual and motor compatibility and accuracy of correction basketball among members of the control group.

3- The experimental group achieved a great superiority over the control group in the tests of perception, motor compatibility and accuracy of the scoring of basketball.

5.2 Recommendations:

1. The need to emphasize the introduction of educational and training means in the curriculum used in the institutes of Al Amal to develop mental processes and motor compatibility.

2. the need for the attention of the teacher in the development of perceptual motor compatibility and other motor capabilities of students of the Institute.

3. the need to pay attention to the training of perceptual during the sports lessons and identify the perceptual variables pertinent to the basketball game and work on how to develop.

4. Conduct studies and research on different age groups and all individuals with special needs who can learn and for both sexes in basketball and other sports (collective and individual).

Sources

- Abou El-Ela Ahmed Abdel Fattah, Physical Training Physiological Foundations, 1st Floor, Cairo, Dar Al-Fikr Al-Arabi, 1997.

- Ahmed Zaki Saleh, Educational Psychology, 14 th, Cairo, Dar Al-Maarif, 1998.

-Aintisar Younes. Human Behavior, Egypt, Dar Al Maaref, 1972.

- Radi alwaqfii: Introduction to Psychology, i 3, Amman, Dar Al-Shorouk, 1988.

- Saad Galal and Mohamed Hassan Allawi, phisycal educational psychology, Cairo, Dar Al-Maaref, 1978.

-Talha Hussein Hossam El-Din, The motor and Functional Foundations of Sports Training, Cairo, Dar Al-Fikr Al-Arabi, 1994.

- Adel Fadel Ali. The Impact of the Uses of Knowledge Base Systems in Symbolic Model Learning Programs for Attacking Fencing Skills, Ph.D. Dissertation, University of Baghdad, College of Physical Education, 2000.

- Abdul Sattar Jabbar: Physiology of Mental Processes in Sport, Amman, Dar Al-Fikr for Printing and Publishing, 2000.

- Abdul Ali Nassif and Qassem Hassan Hussein. Principles of Sports Training Science, Baghdad, Higher Education Press, 1987.

- Abdul Ali Nassif (et al.) Relationship of the final achievement difference with the types of scoring for teams participating in the Atlanta Olympics basketball, Journal of Physical Education, University of Baghdad vol (7), Special Issue (2), 9 198.

-Essam Abdel Khalek, Mathematical Training, Theories and Applications, 2nd Floor, Cairo, Al-Maaref Establishment, 2005.

-Ali Hussein Hashem, Physiological and motor Guides in Sports Psychology, Qadisiyah, 2010.

-Risan kharybt majidTests in Physical Education and Sports, c, Ministry of Education and Scientific Research, University of Basra: Faculty of Physical Education, 1989.

- Fares Sami Youssef. Constructing and standardizing a test to measure some of the basketball skills of youth basketball, PhD thesis, Baghdad university, college of physical education, 2006.

- Qasim Hassan Hussein, Comprehensive sports and Physical Encyclopedia, 1st Floor, Amman, Dar Al-Fikr Al-Arabi, 1998.

- Qasim Hassan Hussein and Fathi Al-Mahshash; Talented Sportsman, Jordan, Dar Al-Fikr for Printing, Publishing and Distribution, 1999.

- Department of Curriculum and Teaching Methods, Lectures in Physical Education Teaching Methods, Zagazig University, Faculty of Physical Education, 2007.

- Qais Naji Abdul Jabbar and Bastawisy Ahmed, Tests and Principles of Statistics in physical Field, University of Baghdad, Baghdad University Press, 1984.

- Mohamed Ibrahim Shehata and Mohamed Gaber Bareeqa. Manual of Body Measurements and motor Performance Tests, Alexandria, Al-Maaref Establishment, 1998.

- Mohammed Hassan Allawi (and others). physical Educational Psychology, Cairo, Dar Al-Fikr Al-Arabi, 1995.

- Mohamed Hassan Allawi (and others). Psychological preparation in handball. I 1,, Egypt, the book center for publication: 2003.

- Mohammed Ali Abu al-kishk and Mazen Rizk Hatamleh. The effect of mental training accompanying the skill training on the development of some perceptual-motor variables on the ground movements of the students of the Faculty of Physical Education, Journal of Studies and Research Physical Education, the sixth issue, 1996.

- Mohamed Sobhy Hassanein, Measurement and Evaluation in Physical and Sports Education, 3rd floor, Cairo, Dar Al-Fikr Al-Arabi, 1995.

- Mohamed Sobhy Hassanein and Hamdy Abdel Moneim. Scientific bases of volleyball and methods of measurement and evaluation, 1st floor, Cairo, Book Center for Publishing, 1997.

- Mahmoud Abdel Dayem and Mohamed Sobhy Hassanein, Measurement in Basketball, Cairo, Dar Al Fikr Al Arabi, 1984.

- Nahida Abdul Zaid Al-Dulaimi, Fundamentals of motor Learning, Najaf, Dar Al-Dhiaa for Printing and Publishing, 2008.

- Nabil Abdel-Hadi: Introduction to Educational Measurement and Evaluation and its Use in Classroom Teaching, Amman, Wael Publishing and Distribution House, 2002.

- Nizar Al-Talib and Mahmoud Al-Samarrai, Principles of Statistics, Physical and sports Tests.

-Nizar Al-Talib and Kamel Lewis, Sports Psychology, Baghdad, Dar Al-Hekma for Printing and Publishing, 1993.

-Huda Naji Zidan, The Effect of Special Exercises in Developing Perceptual-Spatial Perceptions of Handball Goalkeepers of First Class Clubs in the Northern Region, Unpublished Master Thesis, Baghdad University, College of Physical Education for Girls, 2007.

-Wajih Mahgoub. Methods of Scientific Research and Methods, 2nd Floor, Baghdad, Dar Al-Hikma, 1988.

-Wajih Mahgoub. Methods of Scientific Research, Baghdad, Dar Al-Hikma for Publishing and Distribution, 1993.

Appendix 1 shows the training methods used

1- Colored circles on the smooth wall: - It is a drawing of colored circles of different measurements, the player performs correction exercises from different distances and directions and work to introduce the ball in them, and its primary function is to recognize the distance of throwing and movement compatibility between the arm and eye.

2- multiple loops and different heights: - It is several different basket loops in their heights, the player performs exercises from different distances, directions and times and correction, and its basic function sense of the ball and the perception of throwing distance and develop precision.

3- ladder: - It is a means of several ropes in the form of a ladder (staircase), the player to perform exercises movements of the legs in a way that does not touch the stairs, as well as performing scoring

between the stairs and its primary function is to recognize the horizontal distance between the stairs and the compatibility of the movement between the legs and eyes.

4- wooden sign: - It is a means of a wooden board carried two columns of iron and be multi-height, the player performs exercises scoring jumping up, its main function is to recognize the vertical distance by jumping in front of this person, as well as the proficiency and accuracy of the scoring performance.

5- ropes: - It is a normal ropes placed at multiple heights, the player jump over them, as well as performing exercises between them, and its primary function is to recognize the vertical distance by jumping over it, as well as the development of motor compatibility between the legs and eyes.

6- Sponge person: - It is a means of assistance sponge with a height (30) cm and width (50) cm, the player jump over it when performing the scoring, ie, help the player to jump up and get closer to the basket as much as possible.

Appendix 2

Among the experts and specialists in the fields of (tests, measurement, sports training and (basketball

Place of Work	Specialization	Name	ت
University of Qadisiyah College of Physical Education and Sports Science	Tests and measurement	Dr. Salam Jabbar Sahib	1
University of Qadisiyah College of Physical Education and Sports Science	Tests and measurement	Prof. Hazem Mousa Abd	2
University of Basrah College of Physical Education and Sports Science	Tests - basket	Prof. Mustafa Abdel Rahman	3
University of Baghdad College of Physical Education and Sports Science	Athletic Training - handicapped	Prof. Eman Abdel Amir	4
University of Baghdad - College of Physical Education	Athletic Training - handicapped	Prof. Ahmed Mohammed Al-Ani	5

Impact of Rehabilitative Exercises according to gradual kinetic apraxia from different angles to restore the normal kinetic apraxia of injured (frozen shoulder joint) for bodybuilders

Lu'ay Kadhem Mohammed[1], Emad Adel Ali[1] Ya'arb Abdul Baki Daikh[1]

????? INSTITUTES

FULL CONTACT DETAILS OF CORRESPONDING AUTHOR

Abstract

To identify the suggested rehabilitative exercises' impact according to different angles on restoring the kinetic apraxia of the shoulder joint through indicators of some biokinmatic values, the experimental approach has been used within the single group technique. The research sample consisted of about (5) bodybuilders injured in the shoulder joint, which caused the shoulder to freeze. A Japanese-made video camera of Sony hdr-xr520 with a frequency of 100 images/s was used to photograph the sample members within the pre- and post- tests. The values of the shoulder angle variable were figured out within two different positions; the first one expresses the positive kinetic apraxia and the other is figured out from the horizontal precordia position and expresses the negative kinetic apraxia of the shoulder joint using the program(dart fish team pro 5.5).After applying the approach, the post-photographing was applied; then every player started individually because there was a difference in the history of the research sample injuries i.e. the approach was applied on every injured individually and then the results were processed statistically using the program SPSS version 22; several conclusions were found out such as:

-restoring the kinetic apraxia perfectly through the values achieved within the post- test results of the negative and positive kinetic apraxia

-a remarkable improving in the arm speed resulted from restoring the appropriate kinetic apraxia of the joint and decreasing the pain feeling during performing the movement rapidly; this is shown within the results of the arm angular speed.

1-Introduction

Providing the appropriate means and methods for treating some cases of the sportsmen injuries is very important to continue practicing sports and other life activities without feeling the associated pain. The sportsmen, who practice violent sports such as bodybuilders, usually injured because of the high heavy weights which sometimes cause arthritis. The frozen shoulder injury is one of the most significant suffering as it happens without Desmorrhexisor signs of injury, i.e, without wounds and is difficult to be diagnosed. (31: Broad Wallker, 2003) thinks that shoulder joint freezing is a loss of kinetic apraxia due to Parkinson and tightening of ligaments and tissues around the shoulder joint, which affects the movement and results in performing functions hardly, which severely hinder the functional and normal performing functions. This case is also accompanied by a sense of pain and that the previous operations may cause. It is unlikely or rare that diabetes or stroke or myocardial infarction cause it, especially for samples practicing sports at relatively young ages and do not suffer from chronic diseases. However,

external myotatic is one of the most important causes of this injury in such type of sport. Body building sport practiced by the research sample's members is characterized by being exercised sometimes with high weights, especially because the shoulder is an important factor in most exercises performed by the bodybuilder as it's the main engine of the arm;it is one of the joints that bears the burden in fixing the iron pillar for the leg press exercises, as well as,it's an important part in arm and the front and back trunk muscles exercises owing to its close association with these muscles anatomically, as well as, shoulder exercises itself. In the case of problems in the muscles and tissues surrounding the shoulder joint, the most important thing that the injured suffering from is feeling dolor vagus (wandering) pain in the joint, which is difficult to be diagnosed. This pain is accompanied by weakness in the joint and inability or difficulty to raise the arm above the head or extend the arm forward. Providing a particular technique in moving the joint in order to free the shoulder is very important in restoring kinetic apraxia and thus being able to exercise and move as required.

2-The Objective of the Study

Identifying the suggested rehabilitative exercise' impact according to different angles on restoring the kinetic apraxia of the shoulder joint through indicators of some biokinmatic values

3-Methods and Structure of the Study

Since the approach is one of the most significant methods to solve the problem, the researchers have used the experimental approach within the single group technique. The research sample consisted of about (5) bodybuilders injured in the shoulder joint, which caused the shoulder to freeze. In order to ensure the sample's coherence where the arithmetical mean and standard deviation of myodynamic and mass were (83: 1.58) ; the coefficient of variation was (1.90); age (32: 1.58) ;the variation coefficient of variation (4.93), and the incidence of injury and the negative and positive kinetic apraxia of the shoulder joint. In addition, The period and level of injury has been ensured by specialized doctors. The researchers have used Arab and foreign references, a Japanese-made video camera, Sony hdr-xr520, with a frequency 100 images/s, a dell inspiron cor i7 laptop, a tripod and different weights. The sample has been photographed before carrying out the rehabilitative exercises in certain kinetic positions in order to measure the negative and positive kinetic apraxia, such as from the standing position, raise the arms high and from the position of horizontal precordia position, lower (press) shoulders down. The camera has been placed at a distance of 3.5 m and 1.10 m high in the first position; and 3.5 m high in the second position. These measurements were for the horizontal distance from the vertical projection of the camera lens to the body builder's place and the shoulder joint in both positions. The rehabilitative exercises were carried out including a group of shoulder exercises at an angle of 0-45 degrees, then from 0-90 degrees and then from 0-180 degrees**The exercises were lasted for (6 weeks) and were photographed and applied on two of the injured on 17\12\2018, while the three other injured were photographed on 25\12\ 2018 i.e. there is a disparity in photographing and applying time due to the different injury time of the sample members. After that the post- photographing was carried out within the same kinetic positions of the shoulder joint at different times of the injuries according to the end ofthe exercises' applying period. The angles, kinetic apraxia and angular arm speed were measured by (Dartfish team pro 5.5), a program specialized in analyzing of sports movements. The angle of the

shoulder was measured in both positions by measuring the angle between the line drawn from the shoulder joint to the hip joint and the line drawn from the shoulder reaching the (cubital articulation)elbow joint. The statistical program (SPSS) version 22 has been used and the following were figured out:

1-Arithmetical mean

2- Standard deviation

3-Test (t) for the correlated samples

Presenting and discussing the results

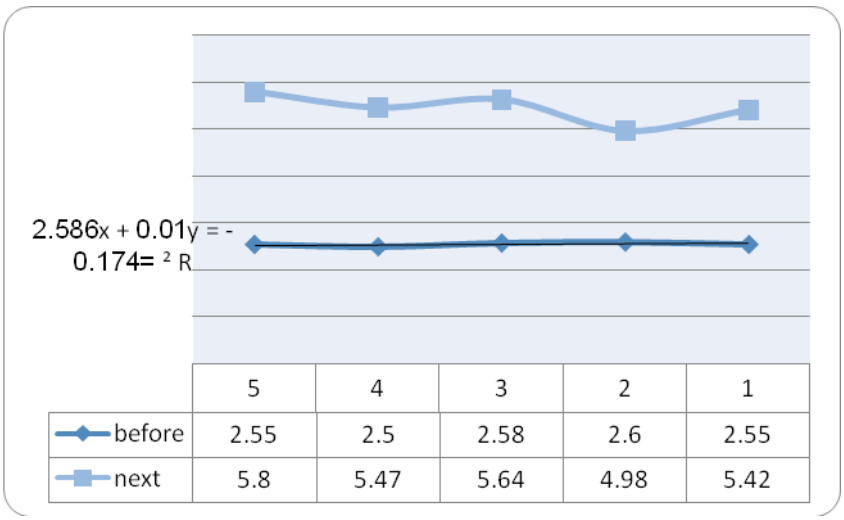
Table (1) shows that there's a very good developing as the rehabilitative exercises used within the approach handled the graduating weights from determined angels and according to terms of the approach and treatment which resulted in better kinetic apraxia and appropriate angular speed. Using the principle of gradual kinetic apraxia works effectively to rehabilitate this type of injury as this technique is usually used for any kinetic joint whether it's made of metal or plastic; where a certain

sig	Test(T)	The standard fault of the Arithmetical mean	Arithmetical mean Differnces	Standard deviation	Arithmetical mean	Standard deviation	Arithmetical mean	The Variable	n
0.002	9.09	1.59	14.53	2.92	152.38	3.73	137.85	Positive kinetic apraxia (degree)	1
0.002	7.43	1.21	9.05	1.03	167.16	2.56	158.10	kinetic apraxia (degree)	2
0.000	19.95	0.14	2.90	0.3	5.46	0.03	2.55	angular arm speed section/s	3

amount of force is shed without causing damage to the joint, which works with a simple kinetic apraxia and then returns to zero position and continues working for certain periods to reach the normal kinetic apraxia. The kinetic apraxia in the exercises at an angle of (90) was the most difficult because of the increasing moment force due to the length of the tension arm within the final position of the joint. So, light weights were initially used for kinetic apraxia exercises of (0-90 degrees).This method of performing exercises gave a chance to restore the kinetic apraxia by increasing myodynamic to certain limits and providing confidence for the bodybuilder to restore his ability to perform.(wygaardn,1988:217) indicates that the degree of pain varies from person to another due to a range of reasons including psychological reasons (Abdul Rahim Ashour Manati,2005, 100) as the pain may not appear in certain kinetic apraxia or appear at the end of the movement or the contraction required to

overcome this weight, so it was done in stages in order not to feel this pain.(Mervat El-Sayed Youssef.2005, 68) indicates that therapeutic exercises strengthen the working muscles in the injured part and elevate the kinetic apraxia of the joint to be a good one. Working on providing exercises, with less kinetic apraxia and then gradual them and control the weights, contributes effectively to restore the kinetic apraxia as using exercises ranging from less tension to higher tension has achieved adapting to the previous experiments. This is confirmed by (Mahmoud Hamdi Ahmed, 2008, 340) that the moving rehabilitative (dynamic) exercises in which weights are used, which is also called the moving muscular work, for example when the front muscle of the shoulder moves and shortens the distance, it results in bending the forearm on the muscle or lifting weight: the muscular work equals force multiplied by the distance. The benefit of these exercises is not only in the used force but the momentum and rotation between contraction and relaxation; in contraction, the muscle ends are attracted to decrease the myogenic and muscular contraction and increase the distance. In every movement, the muscle groups work opposite the corresponding muscle groups at the same timeline, and thus the movement is done regularly. These exercises are used in the player rehabilitation field; amount of force depends on the resistance degree, and that's what the researchers used in their study (22: Omose juard Bo, 1999). The researchers used a new method which resulted in good outcomes represented in the gradual kinetic apraxia according to different working angles. The results of the post- test confirm that the rehabilitative exercises in the followed method increase muscle ductility and joint flexibility. It is worth mentioning that the positive effect of the used variable is represented by increasing of the joint kinetic apraxia and muscle ductility which is the basis of proper movement (collaca-ct, 2001:177).In addition to developing the kinetic apraxia, expanding the kinetic apraxia and restoring the myodynamic resulted in increasing angular speed (Susan j. hall, 2012: 343) which expresses the angular transition during a certain time of the arm; it is also an indicator for a good level of healing as it is very difficult for the person injured by frozen shoulder to perform a rapid movement by the arm because of pain.

Figure (1) shows developing in the angular speed variable



	5	4	3	2	1
before	2.55	2.5	2.58	2.6	2.55
next	5.8	5.47	5.64	4.98	5.42

<u>The Conclusions</u>

1-There's a significant impact of the rehabilitative exercises used in the course, according to gradual different angles, on restoring the normal kinetic apraxia of the shoulder joint.

2-Restoring the normal kinetic apraxia perfectly through the values achieved within the results of the post- test of positive and negative kinetic apraxia for the persons injured by the frozen shoulder joint.

3-The study showed that there is a noticeable development in the arm speed resulting from restoring the normal kinetic apraxia of the joint, as well as, decreasing at the pain level during performing movement rapidly, which have been figured out within the results of angular speed of the injured arm.

Arabic and Foreign References

Arabic References:

-Mervat El-Sayed Youssef : Problems of Sports Medicine, 3rd edition, Alexandria El-Shenhabi Printing Press, 2005, p. 68.

- Mahmoud Hamdi Ahmed: scientific strategy in the therapeutic rehabilitation of sports injuries, 1st edition, Academic Library, Egypt, p. 340.

- Abdul Rahim Ashour Manati:Impact of a suggested rehabilitation approach on treatingthe frozen shoulder injury and comparing it to moving during general anesthesia, unpublished doctoral thesis, Faculty of Physical Education - Basra University, 2005, p 217.

Foreign References

Wygaardn-jp.smith-lh(editors)(1988):cecil textbook of medicine 18th edition w.p.saunders co. philadelphia .

Omose juard bo ,physical training for badmin ron. edited by buoys tim dnclod Denmark,holing book publisher, ais,1999,p22.

Colloca-ct ;keller-ts:electromyogrographic –refiex responses to mechanical force manually assisted spinal manipulative therapy .spine volum 26,no.2001,p177.

Susan j.hall.basic biomchanice.6th edition ,mcgraw-hillNew York, NY 10020.,2012,p343.

Appendix (1)

Shows the suggested mussels rehabilitative exercises' role in rehabilitating the injured frozen shoulder joint

Note: All these exercises used angles of (45, 90, and 180) to rehabilitate the injured frozen shoulder joint

Beak among groups	Number of groups	Number of duplications	Performanc e time	Exercises
30 sec	3	8	1 Min	Hammer Strength Machine(wide and narrow)
30 sec	3	8	1 Min	Wide grip upright rows
30 sec	3	8	1 Min	backward Hammer Press machine
30 sec	3	8	1 Min	front Shoulder press with parallel grip, nearly lying

30 sec	3	6	1 Min	A backward rectangular cable+ one discus
30 sec	3	15items	3 Min	narrow front shoulder press with parallel grip, sitting slumped
30 sec	2	15items	5 Min	+ Side grip, sitting and lying+ parallel grip, sleeping upwards.
30 sec	4	12items	45 sec	Hammer straight front Press, sitting
30 sec	4	15items	45 sec	Cable couple grip, standing with curve
30 sec	4	12items	45 sec	+front Triangular parallel grip pull down front Dumbbell grip, holding hands
30 sec	4	15items	45 sec	Couple hammer front press, slumped
30 sec	4	20items	45 sec	Dumbbell front side hammer grip
30 sec	4	10items	45 sec	Individual cable grip, sleeping with the face up+ narrowTriangular parallel Z grip pull down
30 sec	3	12items	30 sec	Individual cable grip, standing with curve(trundle downwards)
30 sec	3	12 items	30 sec	Wide backwards hammer strength machine press, sitting
30 sec	3	12 items	30 sec	Wide backwards+ forewords parallel press, sitting
30 sec	3	12 items	30 sec	Wide parallel grip, sitting
30 sec	3	12 items	30 sec	Side individual dumbbells grip, standing
30 sec	3	12 items	30 sec	Narrow front triangular cable pull down, sitting lying
30 sec	3	12 items	30 sec	Front dumbbells grip, standing holding hands
30 sec	3	12 items	30 sec	Open arms butterfly backwards, sitting

Immunological effects of recombinant Toxin–coregulated pilus A as a promising subunit local cholerae vaccine

Suadad Awad[1*], Shahla'a M. Salih[1], Saife D. Al-Ahmer[2]

[1] College of Biotechnology, Al-Nahrain University, Baghdad, Iraq.

[2]Institute of Genetic Engineering and Biotechnology for Post Graduate study, Baghdad University, Iraq.

***Corresponding Author** Suadad Awad: Suadad.awad@gmail.com, sosomicro22@gmail.com

Tel: 009647903836492

Abstract

Cholera it represent very antique disease that still take thousands of lives until this century especially in poor countries, this disease caused by *Vibrio cholerae*, in this study we studied the immunization activity of recombinant virulence factor (toxin co-regulated pilus) where the tcp A gene from local strain cloned and expressed in *Saccharomyces boulardii*, mice were immunized with purified TcpA protein give (47.5%) immunization against vibrio cholerae challenge, serum titer of IgG antibodies to TcpA elevatedcompared with non-immunized mice.

Keywords: cholera, TcpA, vaccine, Vibrio cholerae, *Saccharomyces boulardii*

1- Introduction

Cholera is an acute diarrheal disease caused by noninvasive bacterium *Vibrio cholerae* this antique disease still hits and causing the death of thousands of people in different countries especially in developing countries (Molaee *et al*., 2017). *Vibrio cholerae* colonizes the intestinal by releasing many types of toxins lead to secrete electrolytes and fluid rich in potassium, sodium in large amounts override the absorbent intestinal capacity (Kundu *et al*., 2009). TCP is one of these toxins play a master role in the colonization, bacterial receptor for CTX phage and enhance biofilm formation on chitinaceous surfaces (Krebs and Taylor, 2011; Reguera and Kolter, 2005) this role detected in many studies when the TcpA mutated or completely deleted the result was loss of pathogenicity and the colonization ability from Vibrio cholera (Kirn*et al*., 2000).The TCP encode by the tcpA gene is the first gene in the tcp operon (tcpABQCRDSTEF) The operon is located on the Vibrio pathogenicity island lay on chromosome 1, The VPI also encodes (tcpPH, toxT, and acf) (WHO,2001). Generally, this disease can be prevented by vaccination, in recent days there are many vaccines have many defects (limited efficacy in young children, requirements of multiple doses, a cold chain, and complex delivery logistics and high costs) that limit the ability of control endemic or epidemic cholera.(Price and Holmes, 2014)to find a solution for these issues and depends on the results of previous several studies that revealed the antibodies against TcpA can influence immunogenicity by lowering Vibrio cholerae colonization, in this study we tried to improve safe and functional recombinant vaccine of TcpA.

2- Materials and methods

2.1. Bacteria and Yeast strains

Vibrio cholerae strain was obtained from Iraqi hospitals and re-identification by using the Vitek 2 compact system (fig.1) and serological test and sequences technique. Saccharomyces boulardii strain obtained from re-growing the yeast capsules (Dietary supplement) were the yeast capsule opened and poured in YPD broth after that incubated at 37°C with shaking for 1 day, then transferred to YPD plate to collect single colony after that send for the sequence to confirm the species diagnosis.

2.2. Genetic study

Bacteria and yeast genomic DNA was extracted according to the Promega kit protocol (Wizard genomic DNA purification kit Promega /USA), the concentration of the eluted genomic DNA was determined by spectrophotometry with Nanodrop ND-1000. The tcpA was amplified using forward primer (AGGGATCCATGAA CCGGTCAAGAGGGTATGA)and reverse primer (AACTCGA GCT TC CTG GTGCAATGGACTT) manufactured by IDT company (Singapore) the primer contain BamHI and XhoI sites add for cloning procedure (fig.2). The PCR product of TcpA gene was digested and cloned to the Topo® Vector by following the instruction steps in the pYES2.1 TOPO® TA Expression Kit (Invitrogen/USA), the cloning results confirmed by three ways (Direct PCR, restriction enzymes EcoRV and Xbal, and sequencing confirmation) (fig.3). Electroporation was performed using Gene Pulser Xcell TOTAL syst (Bio-Rad Laboratories, United States) set on (voltage 1500, capacitance 25, and resistance 200) (Hudson et al., 2014). Inoculated a single colony containing the ligated plasmid into 15 ml of SC-U medium containing 2% Raffinose and Grow overnight at 30°C with shaking, the OD600 of the overnight culture was measured, the pellet resuspended in 1-2 ml of induction medium(prepared following the instruction steps in the pYES2.1 TOPO® TA Expression Kit (Invitrogen/USA)), and inoculated into 50 ml of induction medium grown at 30°C with shaking, cell was harvested and determined the OD600 of each sample, Centrifuged the cells at 1500 x g for 5 minutes at +4°C, Decanted the supernatant and re-suspend cells in 500 µl of sterile water, the cell centrifuged and the supernatant was removed and stored the cell pellets at -80.°C. By using SDS-PAGE showed that TcpA was located in pellet, for that the denaturation method used to purified it using Ni-NTA spin Kit (QIGENE/Germany), after that the protein refolded following rapid dilution protocol (white et al., 2004), the purified protein was added to buffer (0.02m ethanolamine, 1mM reduced glutathione, 1mMEDTA, ImM oxidized glutathione, and 0.5M l- arginine) with continuous stirring, after 36h at 4C the protein dialyzed and analyzed. The purified recombinant protein was confirmed by the standard protocol for western blot analysis (Hasanzadeh *et al*., 2013).

2.3. ImmunizationStudy

The protein concentration was measured depends on the Bradford method (Bradford, 1976), Fifty of BALB/c male mice with a mean age of six weeks were used ten as control and the other as vaccinated mice. The injections were intradermally in three doses with interval two weeks the first dose was (recombinant TcpA 50µg was mixing with 50µg of Complete Freund's adjuvant), the second and third doses were injected with (recombinant TcpA 50µg was mixing with 50µg of incomplete Freund's adjuvant), while the control group injected with same material except for Recombinant TcpA. The blood sample collected to get serum after that the IgG, IL-5, and INFɤ measured using ELISA technique, and the challenging study was done after 10 days of the last immunization dose, where 40 immunized mice and 10 non-immunized controls were challenged orally with 10^6cell of vibrio cholerae ,mice were observed 3 times/day for the duration of the experiment.

3- Results

The amplified TcpAcloned successfully into pYES2.1 vectorsthis results confirmed by sequencing analyzing by BLAST, tcpA gene was expressed in Saccharomyces boulardii, the purified TcpA proteins analyzed with SDS-PAGE. TcpA specific IgG serum antibodies elevated after immunization from an optical density of 0.251 to 0.491 after 3 weeks booster and reached to 0.65 after 9weeks of immunization (fig.4) while the sera from the control mice did not reveal any significant level of the anti-TcpA antibody.

Identification Information	Analysis Time:	5.82 hours	Status:	Final
Selected Organism	99% Probability	Vibrio cholerae		
	Bionumber:	0425600151501221		
ID Analysis Messages	Critical Pathogen			

Biochemical Details

2	APPA	-	3	ADO	-	4	PyrA	-	5	IARL	-	7	dCEL	-	9	BGAL	+
10	H2S	-	11	BNAG	+	12	AGLTp	-	13	dGLU	+	14	GGT	-	15	OFF	+
17	BGLU	-	18	dMAL	+	19	dMAN	+	20	dMNE	-	21	BXYL	-	22	BAlap	-
23	ProA	-	26	LIP	-	27	PLE	-	29	TyrA	+	31	URE	-	32	dSOR	-
33	SAC	+	34	dTAG	-	35	dTRE	+	36	CIT	+	37	MNT	-	39	5KG	-
40	ILATk	+	41	AGLU	-	42	SUCT	+	43	NAGA	-	44	AGAL	-	45	PHOS	-
46	GlyA	+	47	ODC	-	48	LDC	-	53	IHISa	-	56	CMT	+	57	BGUR	-
58	O129R	-	59	GGAA	+	61	IMLTa	-	62	ELLM	+	64	ILATa	-			

Fig.1. Results of Vitek Compact System showed the strain in this study its *Vibrio cholerae*

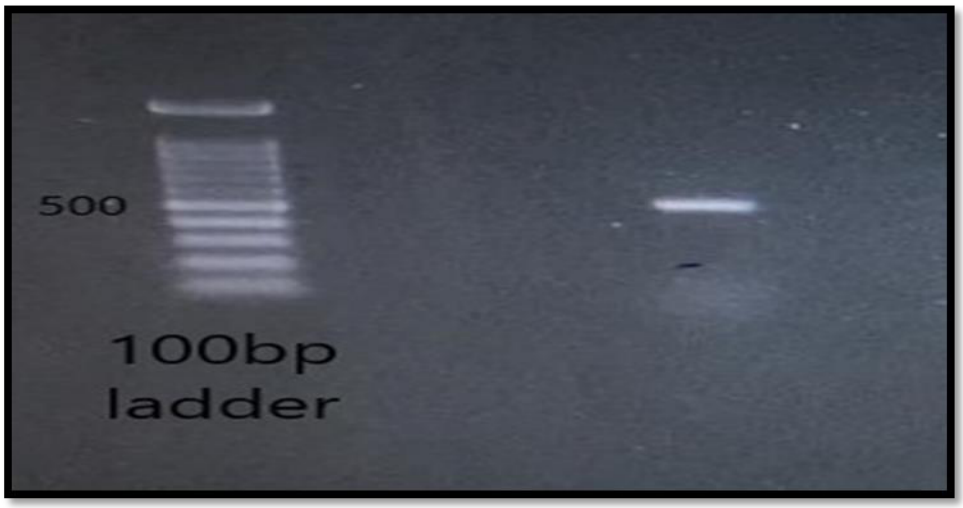
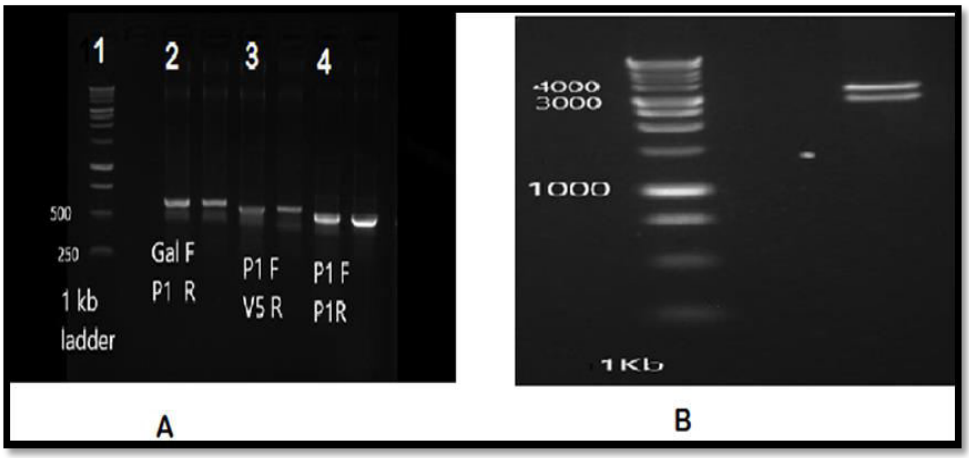


Fig.2 Amplified tcpA using the primer designed by IDT company (Singapore) the primer contain



BamHI and XhoI sites add for cloning procedure.

Fig .3 A results of direct PCR In this method we used different primers lane2: GAL1 F+ TcpA primer R, lane 3: TcpA primer F +V5R, lane 4: TcpA primer F+R and lane 1: DNA 1kb ladder, B The orientation of insertion in Pyes2.1 vector checked used restriction enzymes EcoRV and Xbal to digest the plasmid, two bands are shown on the Gel electrophoresis.

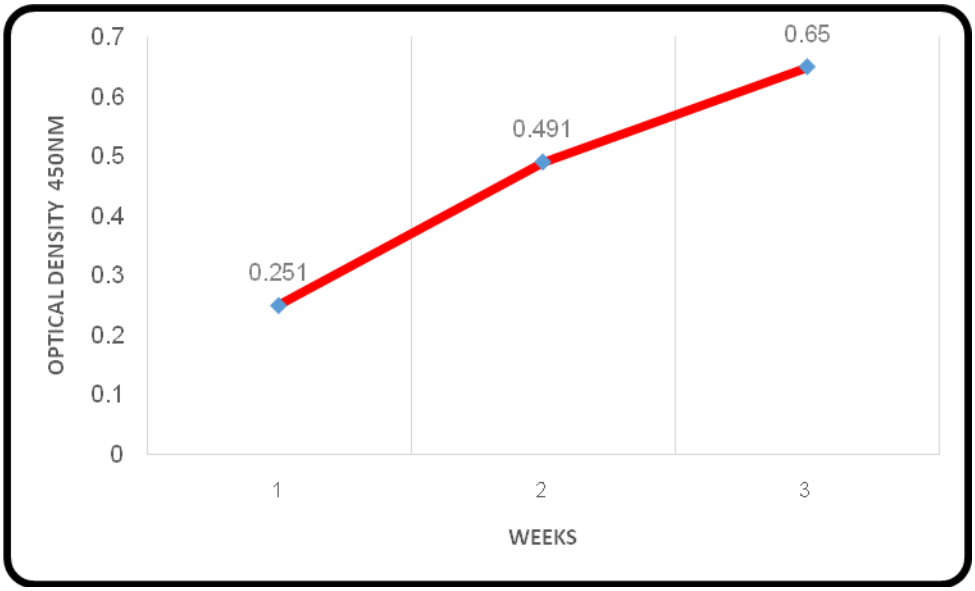


Fig.4. The time course study of the immune response of BALB/c mice immunized with recombinant tcpA at 3 weeks intervals (1, 2 and 3 weeks on the horizontal axis represent 3, 6 and 9 weeks respectively). Each point represents the mean ofserum IgG from 10 mice measured by ELISA.

Results of INF-Gamma and IL5 levels revealed no significant difference ($p<0.05$) in the levels of IF-gamma and IL5 in immunized mice serum, however the challenge experiments show that 19 of immunized mice didn't get any infection in rate(47.5%),while 9 (22.5%) haveindolence, and 13(32.5%) vaccinated mice get sever diarrhea, while the non-immunized mice get diarrhea after 24-38 hours from ingested the *Vibrio cholerae* this revealed that TcpA recombinant protein didn't give good protection against this bacteria.

4- Discussion

in spite of a large number of cholera vaccines but none of these successfully prevent this disease or give full protection against it especially in poor areas where the disease it's endemic there, for that the researches around the world keep trying to find out safe and effective vaccine (Leitner*et al*.,2015).TcpA is the prime subunit of pilus in vibrio cholerae, its represent the main attachment factor of *Vibrio cholerae* to epithelium cell in intestine and the recent studies revealed that antibodies against TcpA correlated with protection againstcholera (Harris *et al*., 2009), also the patient who recovery from cholera developed IgG and IgA memory B cell-specific for TcpA This important for long term immunity against cholera (Arifuzzaman*et al*., 2012;Pasetti and Levine, 2012). Recent study cloned and expressed tcpA gene in *Saccharomyces boulardii* as well as, the immunogenicity of this antigen was studied. The results showed no significantdifference between the vaccinated and non-vaccinated mice in the levels of INF-gamma and IL5, while the challenge experiments results revealed that recombinant TcpA give weak immunity in rate (47.5%) to the vaccinated mice while all non-vaccinated mice died after severediarrhea, this results demonstrated that tcpA can stimulate partial immune responses,this resultsconsistence with Molaee *et al*.(2017) were they revealed there is no significant value in IL5 and INF-gamma level in mice serum however this level increased when (IL5,INF-gamma)measured in the supernatant of mononuclear cell culture refer to the activation of Th2 cell response (Molaee *et al*.,2017), other study showed TcpA can be used successfully as preventive subunit against cholera by using intranasal immunization way in rabbits, and to get highly protection against cholera prefer to use CtxB and TcpA together to stimulate antibacterial and antitoxic immunity against cholerae (Kundu *et al*.,2009)

From this study, we concluded that low ability of TcpA subunit to act as avaccineagainst*Vibrio cholera* and to improve this abilitypreferably usethe TcpA with other vibrio cholerae toxin to improve safe and effective vaccine with a low price that gives chance to poor countries to vaccinate all people

5- References

ArifuzzamanM, Rashu R, Leung DT, Hosen MI,Bhuiyan TR, Bhuiyan MS, Rahman MA, KhanamF,Saha A, Charles RC, and LaRocqueRC. 2012. Antigen-specific memory T cell responses after vaccination with an oral killed cholera vaccine in Bangladeshi children and comparison to responses in patients with naturally acquired cholera. Clin. Vaccine Immunol., **19**(8), pp.1304-1311.

BradfordMM. 1976. A rapid and sensitive method for the quantitation of microgram quantities of protein utilizing the principle of protein-dye binding. Analytical Biochemistry.**72**:248-254

Harris JB, Podolsky MJ, BhuiyanTR, Chowdhury F, KhanAI, LaRocqueRC, LogvinenkoT, Kendall J, Faruque AS,Nagler CR, and Ryan, ET. 2009. Immunologic responses to Vibrio cholerae in patients co-infected with intestinal parasites in Bangladesh. PLoSNeglected Tropical Diseases, **3**(3), p.e403.

Hasanzadeh L, Ghaznavi-Rad E, SoufianS, Farjadi V, andAbtahi H. 2013. Expression and antigenic evaluation of vacA antigenic fragment of helicobacter pylori. Iranian Journal of Basic Medical Sciences, **16**(7), 835.

Hudson LE, Fasken MB, McDermott CD, McBride SM, Kuiper EG, Guiliano DB, Corbett AH,and Lamb TJ.2014. Functional heterologous protein expression by genetically engineered probiotic yeast Saccharomyces boulardii. PloSOne, **9**(11), p.e112660.

Kirn TJ, Lafferty MJ,Sandoe CM, and Taylor RK. 2000. Delineation of pilin domains required for bacterial association into microcolonies and intestinal colonization by Vibrio cholerae. Molecular Microbiology, **35**(4), 896-910.

Krebs SJ and Taylor RK. 2011. Protection and Attachment of Vibrio cholerae Mediated by the Toxin Co-regulated Pilus using the Infant Mouse Model. Journal of Bacteriology, JB-00378.

KunduJ, MazumderR, Srivastava R and Srivastava BS.2009. Intranasal immunization with recombinant toxin-coregulated pilus and cholera toxin B subunit protects rabbits against *Vibrio cholerae* O1 challenge. FEMS Immunology & Medical Microbiology, **56**(2):179-184.

LeitnerDR ,LichteneggerS, Temel P,ZinglFG,RatzbergerD, RoierS,Schild-PrüfertK, Feichter S, Reidl J, and Schild S. 2015. A combined vaccine approach against Vibrio cholerae and ETEC based on outer membrane vesicles. Frontiers in Microbiology, **6**, p.823.

MolaeeN, MosayebiG, Amozande-Nobaveh A, Soleyman MR andAbtahiH.2017. Evolution of the Immune response against recombinant proteins (TcpA, TcpB, and FlaA) as a candidate subunit cholera vaccine. Journal of Immunology Research, **2017**:8

PasettiM.F,and Levine MM. 2012. Insights from natural infection-derived immunity to cholera instruct vaccine efforts. Clin. Vaccine Immunol., **19**(11), pp.1707-1711.

Price GA and Holmes RK. 2014. Immunizing adult female mice with a TcpA-A2-CTB chimera provides a high level of protection for their pups in the infant mouse model of cholera. PLoSNeglected Tropical Diseases, **8**(12), e3356.

RegueraG andKolter R. 2005. Virulence and the environment: a novel role for Vibrio cholerae toxin-coregulated pili in biofilm formation on chitin. Journal of Bacteriology, **187**(10), 3551-3555.

World Health Organization (WHO).2001. Weekly epidemiological record (Cholera 2000) No. 31, 2001, 76, 233–240.

The effect of Free warm up exercises In terms of some heart variables to get rid of lactic acid which accumulated by top power for handball players

Mushreq Aziz Tuneish Al-Lamiy[1], Hasan Abdalhadi Lhemus Al-Zlhayyim[1]

1. Al-Qadisiyah University, College of Physical Education & Sports Science

*Corresponding author: Prof Al-Lamiy (Email: Mushreq.Allamiy@qu.edu.iq)

Abstract :

The present study aimed to know the hearts' variables caused by the variables occurring as result of the proposed free warm-up and compare it with the traditional warm-up to get rid of lactic acid. The researcher used the descriptive approach as it is the appropriate approach to solve the research's problem and to achieve its goals, the research sample included (10) players from Al-Karkh Club, whose lengths ranged (191.8 cm) , their weights (78.2 kg) and ages (20.5 years).

As for the studied variables, they included cardiac muscle variables (pulse - cardiac output - heartbeat size) and blood lactic acid concentration. The members of the sample performed the tests that included (4) stages of the time of each stage (4) minutes when they were warming up and then the effort directly. In each stage the mentioned variables were measured. In the light of the researcher's findings of that there is no difference between free and traditional warm-up of studied variables.

Key words: free warm-up, heart variables, lactic acid, handball

Introduction:

The physiology is considered and what can be obtained from it of the scientific information on every detail of the training process is possible this science is the one who has the major and main responsibility in making developments and improvements in the training process. This made the rest science in connection with sport physiology integration of success factors and improvements in physical performance and career for athletes in general. The responsibility for physiology did not end in the process of diagnosing functional and physiological competence rather, it went beyond improving physical performance through several procedures the chemical mechanisms, among them the physiological benefits for preparation exercises and initializing before competition or training, as this stage is called a warm-up or heating has many benefits, the most important of which is to increase supply oxygen to the muscles functions besides raising the temperature of the internal body systems, Bishop D (2003) may mention, "This may be through the performance of a variety of physiological and biological exercises. and biochemical reactions that increase flexibility of muscles and tendons, the high blood flow to the muscles accelerates metabolic reactions and the velocity of neurotransmission "(33:14), which in turn affects an increase in bonding the disengagement of oxygen and hemoglobin which was confirmed by Adlercreutz H & et al (1986), as cortisol and testosterone levels were depended on the duration, intensity and exercises it was found that a decrease in testosterone / cortisol ratio be in associated with excessive training that is characterized by low physical performance in a particular sport (28:11) and Urhausen A & et al (1995) mentioned. The reports on this ratio are also an indication of actual physiological stress in training (20:252) and Gerbino sees A, ward SA, Whipp BJ (1996): Warm-up before exercise may improve performance, especially in extreme intensity, which is measured by the delay in exhaustion time, which may be due to metabolic fatigue before exercise quickly as oxygen absorption (VO2) is less when relying on aerobic metabolism. Early studies showed the speed of movement of O2 in heavy exercises (19: 101) and Fradkin AJ & et al (2010) see that the effect of warm-up on subsequent athletic performance has been verified since 1930 there and widely believed that warm-up before athletic activity may improve athletic performance . (16:144). Therefore, physiologists and training scientists emphasize the importance of warm-up, and we note that athletes perform a variety of general exercises in addition to the exercises that relate to the aspect of exercise effectiveness or physical activity performed. Behm DG & et al (2001) notes that they often complete warm-up protocols statically or dynamically moving. Whereas the studies found constant movements extend to the detriment of performance in race runs, in jumping movements and other activities that require strength (12: 263) FIBA (2010) despite almost universal agreement on the beneficial value of warm-up before athletic competition, however, it is surprising that there is no information on the beneficial effect for a long period the beneficial effects of warming up on the next performance, such information are very important and crucial in handball. Therefore, the warm-up, or what athletes generally do in general, are preparing exercises that have physiological dimensions which is more physical because the physical performance of players is linked to the ability of body systems in providing all the biological supplies needed to produce energy in order to the completion of the muscular action required to perform, and accordingly, what the players get from warming up before the competition, to prepare for all the body's systems, is a very important thing, being associated with a healthy side is the protection of motor systems from possible injuries, and on the other hand, it is the increased ability of muscles involved in the oxidation of energy elements to perform physical exertion. For the peculiarity of the handball game, especially since the effort followed in that game is anaerobic effort and there was a free warm-up proposed by the

researcher, and what was mentioned above is the handball game and what is included in the handball game is the team that adopted 16 players in the game, among them will be 10 players who must be seated at all times.Warm-up is not permitted by the coach, who has the right to decide to use it. and if it was mentioned that athletes can respond better to extreme activities after warming up (18: 157) then this requires some players to sit on the bench for different periods after performing warm-up exercises, these periods can be the physiological benefit of warming up has been negatively affected, so it is a problem , the research lies in knowing the physiological effect of stopping after performing warm-up exercises before performing the physical effort, which is similar to the period when handball players sit on the bench during the match, this is mainly reflected in lactic production processes in exchange for disposal , therefore it is clearly demonstrated when observing the non-linear excess in concentration of the lactic acid This is called the lactic threshold that forms the burden Physical and physical burden on players when they cross the threshold too early.

Research Methodology: The researchers determined the experimental approach to solve the study problem and achieve its goals.

The Study community: The researchers identified the study community, namely the Najaf club players for the sports season (2018-2019) category of (16) players, and after selecting the sample in a simple random way (lots) where (10) players were chosen after having excluded the goalkeepers who number (3) harmonization was performed for the members of the study sample in terms of tests of study variables.

Table No. (1) shows the homogeneity of the sample in some influencing variables

S	Variables	Mean	Standard deviation	Differential factor	skewnes
1	Heartbeat	67.53	1.48	2.191	0.30
2	Size strike	79.2	2.34	2.954	0.21
3	Cardiac output	95.21	3.265	3.429	0.34
4	Length	191.8	1.431	0.746	0.16
5	Weight	78.2	0.749	0.957	0.25

Tools, means and devices used in the study: (sources and references - handball field - tape measure - hour - timing - whistle - Lactic prom meter - lactic acid blocks - Vizeflo device to measure heart variables - fit mat - to measure VO2MAX - the treadmill you want (Tradmill) - Center Fuge - Blood Separation Tube - (COOL BOOX) - Medical Injection (5cc).

The tests used in the study:

First: Measuring the progressive physical stress test (8: 572) The researchers used a test to measure the anaerobic differential threshold, which includes four stages of physical effort that are determined on the basis of the blood lactic acid concentration reaching 4 mmol / l. As for determining the nature of the effort (the speed of treadmill) It is done according to the maximum oxygen consumption of the players, thus the performance will suit the physical and physiological capabilities of the players, which showed that VO2max for the individuals in the eye was confined between (49-46 milliliters / kg / minute), and thus the speed of the moving belt device was determined according to the second stage specified in Table (2).

Table (2) shows the anaerobic threshold test on the moving belt (km / h)

Maximum consumption O2	**the first phase**	**the second phase**	**the third phase**	**the 4th phase**
45 or less	8	9.6	11.2	13
50 -46	9.6	11.2	13	14.5
55 -50	11.2	13	14.5	16.1
60 – 56	13	14.5	16.1	17.8
65 -61	14.5	16.1	17.8	19.4
66 or more	16.1	17.8	19.4	20.8

Second: Measuring the maximum oxygen consumption (21): For the purpose of determining the appropriate stage in the anaerobic threshold test, a test must be conducted to measure VO2max. Therefore, the researchers used a test that includes six stages of voltage; the time of each stage is 3 minutes. The speed of the device at the end of each stage as shown in the test details in Figure 1

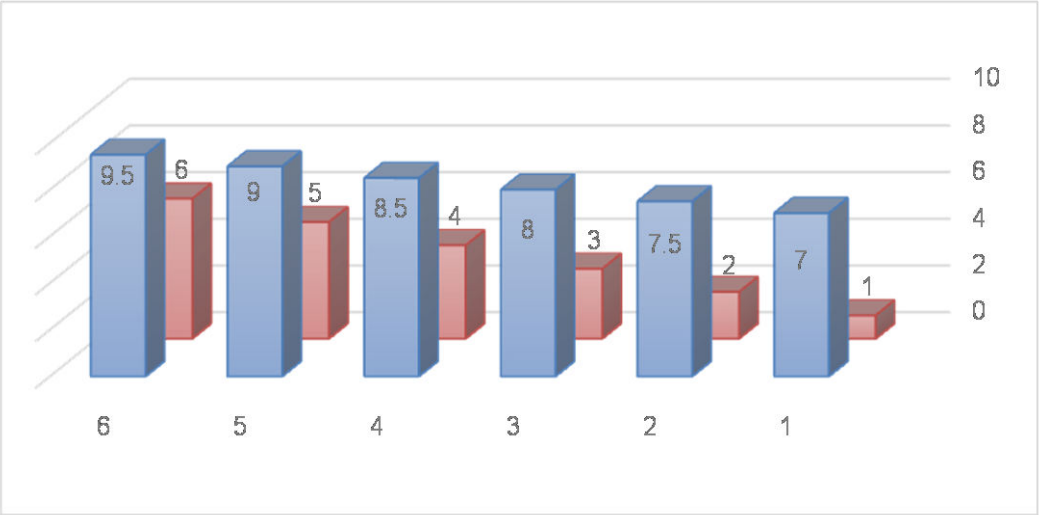


Figure (1) illustrates the six-stage VO2max test

Third: Measuring cardiac muscle variables

An examination was carried out to measure the parameters of the heart muscle (heart rate per minute, heartbeat size, cardiac output) at rest and during physical effort using a physioflow device that works according to Bluetooth technology after installing 6 spots on the chest of the player and as shown in Figure (2), which gives Measuring the heart muscle for (17) variables, including (CO, HR) on the computer screen that is connected with the device wirelessly. This technique enabled researchers to monitor the changes that occur in the heart muscle at rest and during physical effort at each of the four stages of the anaerobic threshold test .

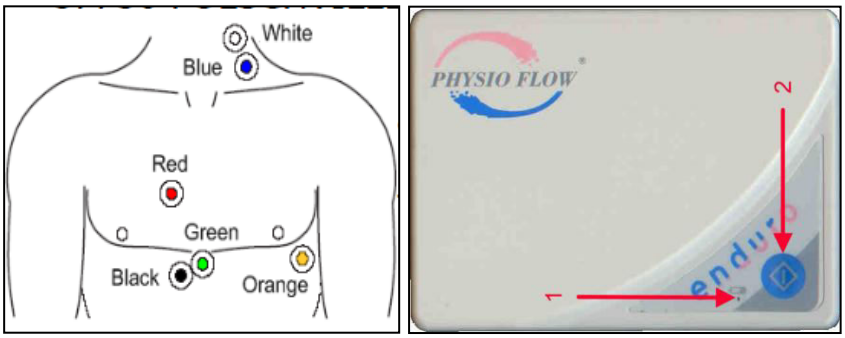


Figure 2 shows the physio flow device and where the electrodes are placed on the player's chest

Warm-up specifications for handball players (members of the current study sample)

First: the traditional warm-up

It included two main parts:

1. **General warm-up**:

This included general movements to create the body's systems (running, elongation exercises, and accelerations). This section lasted for 15 minutes.

2. **Special warm-up**:

The action included balls (maneuvers varying movement, peaceful shooting on the basket, shooting aiming from the movement, making a quick attack half a field) may this part lasted for 20 minutes.

Second: Free warm-up

The researchers suggested warming up according to the chart below

After completing the warm-up, the players will move to the physiological laboratory near the gymnasium to perform the required physical effort after the specified times.

The main experiment: After completing and preparing all the requirements, the researchers conducted the main experiment in two phases, as follows:

The first stage: The tests were performed at rest time for cardiac muscle variables (pulse - stroke size - cardiac output) and lactic acid.

The second stage: This stage lasted for several days, and this includes being examinations of the variables under study (cardiac muscle), as the work continued for 20 days, and included a physical effort test (anaerobic threshold) after performing the warm-up for handball players without stopping to warm up and after completion Of all the players, the same procedures were repeated for different times to stop after the warm-up performance.

The statistical means: (arithmetic mean, standard deviation, F-code for correlated samples, difference coefficient, torsional coefficient, T-law for correlated samples, T-law for independent samples).

Presentation, analysis and discussion of results

Table (3) shows the value of the arithmetic mean and bias deviations for tests of cardiac muscle variables (heartbeat- size strike - cardiac output) and lactic acid for free

Variables	Aggregates	Mean	Std. Deviation
Heartbeat	M1*	167.5000	3.95109
	M2	180.0000	2.26078
	M3	186.8000	2.65832
	M4	193.0000	1.41421
	M1	82.9000	1.79196

*-1M1 the first phase its tune 4 minutes
-2M2 the second phase its tune 4 minutes
-3M3 the third phase its tune 4 minutes
-4M4the 4th phase its tune 4 minutes.

Size strike			
	M2	88.3000	3.74314
	M3	98.2000	2.09762
	M4	107.2000	2.25093
Cardiac output	M1	13.8842	0.38680
	M2	15.8920	0.65616
	M3	18.3431	0.44139
	M4	20.6899	0.47687
Lactic acid	Before the effort	1.5400	0.20600
	After the effort	12.2500	0.77900

Table (4) shows the calculated F value for tests of cardiac muscle variables (pulse - stroke size - cardiac output) and lactic acid for free warming.

Variables		Sum of Squares	df	Mean Square	F	Sig.
Heartbeat	Between Groups	3581.675	3	1193.892	160.314	0.000
	Within Groups	268.100	36	7.447		
Size strike	Between Groups	3474.900	3	1158.300	173.600	0.000
	Within Groups	240.200	36	6.672		
Cardiac output	Between Groups	261.915	3	87.305	348.387	0.000
	Within Groups	9.021	36	0.251		

Table (5) shows the value of L.S.D for tests of cardiac muscle variables (pulse - heartbeat size - cardiac output) for free warm-up

Variables	Aggregates		Mean Difference	Sig.
Heartbeat	M1	M2	-12.50000	.000
		M3	-19.30000	.000
		M4	-25.50000	.000
	M2	M3	-6.80000	.000
		M4	-13.00000	.000
	M3	M4	-6.20000	.000
Size strike	M1	M2	-5.40000	.000
		M3	-15.30000	.000
		M4	-24.30000	.000
	M2	M3	-9.90000	.000
		M4	-18.90000	.000
	M3	M4	-9.00000	.000
Cardiac output	M1	M2	-2.00780	.000
		M3	-4.45890	.000
		M4	-6.80570	.000
	M2	M3	-2.45110	.000
		M4	-4.79790	.000
	M3	M4	-2.34680	.000

Table (6) correlated value (T) of lactic acid for free warming

Mean	Std. Deviation	Std. Error Mean	t	Sig
-10.71000	0.69514	0.21982	-48.721	0.000

Table (7) shows the value of the arithmetic mean and standard deviations for tests of cardiac muscle variables (pulse - heartbeat size - cardiac output) and lactic acid for conventional warm-up

Variables	Aggregates	Mean	Std. Deviation
Heartbeat	1.00	168.5000	2.36878
	2.00	179.3000	2.40601
	3.00	187.3000	2.79086
	4.00	193.3000	1.56702
Size strike	1.00	83.0000	1.49071
	2.00	88.2000	3.55278
	3.00	98.7000	2.11082
	4.00	107.2000	2.29976
Cardiac output	1.00	13.9859	.33742
	2.00	15.8153	.70278
	3.00	18.4856	.44148
	4.00	20.7213	.45330
Lactic acid	Before the effort	1.570	0.309
	After the effort	12.150	0.698

Table (8) shows the calculated F value for tests of cardiac muscle variables (pulse - stroke size - cardiac output) and lactic acid for conventional warm-up

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	3452.800	3	1150.933	212.698	0.000
Within Groups	194.800	36	5.411		
Between Groups	3506.675	3	1168.892	190.150	0.000
Within Groups	221.300	36	6.147		
Between Groups	262.893	3	87.631	347.692	0.000
Within Groups	9.073	36	0.252		

Table (9) shows the value of L.S.D for tests of cardiac muscle variables (pulse - stroke size - cardiac output) for conventional warm-up

Variables	aggregates		Mean Difference (I-J)	Sig.
Heartbeat	1.00	2.00	-10.80000*	.000
		3.00	-18.80000*	.000
		4.00	-24.80000*	.000
	2.00	3.00	-8.00000*	.000
		4.00	-14.00000*	.000
	3.00	4.00	-6.00000*	.000
Size strike	1.00	2.00	-5.20000*	.000
		3.00	-15.70000*	.000
		4.00	-24.20000*	.000
	2.00	3.00	-10.50000*	.000
		4.00	-19.00000*	.000
	3.00	4.00	-8.50000*	.000
Cardiac output	1.00	2.00	-1.82940*	.000
		3.00	-4.49970*	.000
		4.00	-6.73540*	.000
	2.00	3.00	-2.67030*	.000
		4.00	-4.90600*	.000
	3.00	4.00	-2.23570*	.000

Table (10) correlated value (T) of lactic acid for conventional warm-up

Mean	Std. Deviation	Std. Error Mean	t	sig
-10.58000	.61427	.19425	-54.466	.000

Table (11) shows the calculated value (T), arithmetic mean, and standard deviations for free and traditional warm-up.

Variables		aggregates	Mean	Std. Deviation	t	sig
Heartbeat	Free warm up	M1	167.5000	3.95109	0.155	-0.686
	Traditional warm up	M1	168.5000	2.36878		
	Free warm up	M2	180.0000	2.26078	0.670	0.864
	Traditional warm up	M2	179.3000	2.40601		
	Free warm up	M3	186.8000	2.65832	-0.410	0.952
	Traditional warm up	M3	187.3000	2.79086		
	Free warm up	M4	193.0000	1.41421	-0.449	0.714
	Traditional warm up	M4	193.3000	1.56702		
Size strike	Free warm up	M1	82.9000	1.79196	-0.136	0.380
	Traditional warm up	M1	83.0000	1.49071		
	Free warm up	M2	88.3000	3.74314	0.061	0.948
	Traditional warm up	M2	88.2000	3.55278		
	Free warm up	M3	98.2000	2.09762	-.531	0.926
	Traditional warm up	M3	98.7000	2.11082		
	Free warm up	M4	107.2000	2.25093	.0420	0.943
	Traditional warm up	M4	107.2000	2.29976		
Cardiac output	Free warm up	M1	13.8842	0.38680	-0.627	0.724
	Traditional warm up	M1	13.9859	0.33742		
	Free warm up	M2	15.8920	0.65616	0.252	0.727
	Traditional warm up	M2	15.8153	0.70278		
	Free warm up	M3	18.3431	0.44139	-0.722	0.982
	Traditional warm up	M3	18.4856	0.44148		
	Free warm up	M4	20.6899	0.47687	-0.151	0.753
	Traditional warm up	M4	20.7213	0.45330		
Lactic acid	Free warm up		12.2500	0.77924	0.302	0.848
	Traditional warm up		12.1500	0.69801		

The discussion :

Tables (8,4) show that there are significant differences between the four stages of the test that has been implemented gradually, and researchers believe that this means that the variables of the heart muscle which was in an increase in the values of its variables in proportion to the degree of physical burden carried out and its speed, and this is one of the important things presented by the cardiac muscle when the need for O2 increases compared to rest due to the speed of physical work performed , thus, the speed of energy production needed to complete that work is commensurate with the speed of O2 conduction, and therefore we note that there is a gradual increase in the need for O2 therefore, we note that there is a gradual increase in the need for O2 to implement this physical effort. This is done through the relationship between the heart rate and the strike size the cardiac thrust (cardiac output), which is the last, is the product of H.R * S.V. Thus, through physical effort with high speeds, the increase in cardiac output is fascinated by increasing the venous return. At the expense of the time of relaxation and the expansion of cardiac fibers and thus increase the delivery of O2 to the working muscles in addition to rid them of CO2 produced by the metabolism of food and the acidity limit processes resulting from the accumulation of hydrogen from anaerobic glycolysis, from the foregoing, we notice that the mechanisms for implementing both warm (free) and warm (traditional) are equal to the results, since the warm-up period in general has a very important for the physiological preparation in addition to the physical preparation of the working muscles. Among the most important systems that are prepared are the cardiac muscle, so that liters of blood are raised to body systems in addition to the process of redistributing the blood again , This in itself is very important in the process of producing the energy necessary to complete the requirements of physical work with the required speed and the specified time. Upon observing Table (11), which shows the differences between the functional variables of the proposed (free) warm-up and the traditional warm-up that is

implemented, we find that they were random, and this means that the responses were at the same level, as we have noticed that the physical effort performed is the same and this is a clear indication that the requirements for a progressive physical effort This is evidence that the free warm-up suggested by researchers has the same effect on the body's systems in terms of physiological preparation that was previously mentioned. The importance of warming up in minimizing negative effects appears if it is implemented in a scientifically studied way. Among the negative effects is the accumulation or production of more free radicals within the working muscles, and the reason for this is the sudden rush of large quantities of blood to the working muscles, which would create a state of imbalance The chemical in the processes of extracting O2 and energy production, and this is one of the important factors for warming up if it is done correctly and gradually pushing the blood to the working muscles that are prepared to receive additional quantities during the effort. Accordingly, the proposed warm-up is nothing but optional moves that are carried out according to specific templates on the field, but it is left to the player to choose the sequence of implementation of these movements so that they have physical burdens in addition to the physiological preparation where he confirms (Bahauddin Salama 2000) "It may indicate that simply the cardiac output can be calculated The outcome of hitting the heart rate (HR) multiplied by the size of the strike (SV) during rest and varies according to the position of the body and the effort performed by it ((2:62) and also confirms (Jamal Sabri, 2012)) There are physiological mechanisms for warm-up processes that are believed to improve physical achievement the mechanical sufficiency of muscle contraction develops with increasing temperature have missed, as well as the muscle contractions are faster and stronger when it rises and stronger when the muscle temperature rises slightly above the body temperature, when a phenomenon occurs in the muscles, it contracts more strongly than its first constriction after its constriction for a few times, and research evidence indicated that the effective warm-up exercises before the athletic activity will enable the athlete to physically prepare it for the best achievement according to (Increased rate and strength of muscular contractions as well as increased compatibility during the activities that follow in the training unit or race, or prevention of injuries. ((4:203) It is mentioned (Guyton & Hall, 1997)) that the amount of blood pumped by the heart must quickly flow blood into the veins to it This is called venous reflex This heart automatically pumps the incoming blood to the systemic arteries so that it can rotate again and this inner capacity of the heart is called the Frank and Starlink mechanism, meaning that the larger the heart is filled with blood during diastole, the greater the amount of blood it pumps to the aorta. It reaches it without allowing large quantities of it to accumulate in the veins "(7:135).

The Conclusions and recommendations

The Conclusions:

1. There is a discrepancy in the players reaching the anaerobic threshold.

2. Not accumulating or producing more free radicals for handball players.

3. There are no differences in the amount of blood paid, as well as heart variables, between free warm-up and conventional warm-up

The Recommendations:

1. Conduct periodic physiological examinations to assess the physiological efficiency of the players, including the anaerobic differential threshold and the evaluation of antioxidants.

The References:

1. Abu Al-Ulla Ahmed Abdel-Fattah, Omar Shoukry Omar, Tareq Hassan Al-Metwally (2003) Safe Sports Performance and Free Slits, Arab House of Thought, Cairo.
2. Bahaa Al-Ddin Ibrahim Salama (2000), Physiology of Sport and Physical Performance, Dar Al-Fikr Al-Arabi, Cairo, 1st floor.
3. Bahaa Mohamed Taqi Al-Musawi (2014), the effect of special exercises with taking coenzyme 10 and carnitine on performance tolerance and some biochemical variables among young handball players. PhD thesis, University of Qadisiyah, College of Physical Education.
4. Jamal Sabri Faraj (2012). Power, Ability and Modern Sports Training, Dar Degla, Amman.
5. Hussein Ahmed Heshmat and Nader Muhammad Shalaby (2003) Physiology of Muscular Fatigue. Cairo, 1st floor.
6. Sabah Najeeb Abdul Rahim (2005) Cardiovascular Physiology, Dar Al-Manhajj, Amman.
7. Gayton & Hall (1997) Reference in medical physiology, translated by Sadiq al-Hilali, 9th edition.
8. Hazza Bin Muhammad Al-Hazzaa (2009), Physical Effort Physiology (Theoretical Bases and Laboratory Procedures for Physiological Measurements), Part 1, King Saud University, Scientific Publishing and Printing Press.
9. Qais Saeed Dayem (2010), the effect of supplying some antioxidants under anaerobic endurance training conditions in some of the directories of free radicals and biochemical variables for young handball players, PhD thesis, University of Qadisiyah - College of Physical Education.

10.Alessio HMA, Goldfarb AH, Cutter RG (1988) MDA contents in fast-and slowtwitch muscle with intensity of exercise in rats. Am J Physiol 255: C874-C877
11.Adlercreutz H., Harkonen M, Kuoppasalmi K, Naveri H, Huhtaniemi L, Tikkanen H, Remes K, Dessypris A, Karvonen J (1986) Effect of training on plasma anabolic and catabolic steroid hormones and their response during physical exercise. Int J Sports Med 7(suppl): 27–28
12.Behm DG, Button DC, Butt JC (2001) Factors aVecting force loss with
13.prolonged stretching. Can J Appl Physiol 26:261–272
14. Bowry vow ,mohr,d,cleary stocker(1995). prevention of tocopherol-mediated peroxidation in ubiquinol -10-10-free human low density lipoprotein boil chem .

15. Bishop D (2003) Warm-up I. Potential mechanisms and the eVects of passive warm up on exercise performance. Sports Med 33:439–454
16.FIBA (2010) OYcial basketball rules. Art. 4.2.2 and 7.5.
http://www.fiba.com/downloads/Rules/2010/OfficialBasketballRules2010.pdf.
17.Fradkin AJ, Zazryn TR, Smoliga JM (2010) EVects of warming-up on
18. physical performance: a systematic review with meta-analysis. J Strength Cond Res 24:140–148
19. Maritime ac(2003):diabtes.oxdative stress.And antioxidants: a review's biochem molecular toxicology:17(1):28-32
20. Mohr M, Krustrup P, Nybo L, Nielsen J, Bangsbo J (2004) Muscle temperature and sprint performance during soccer matches—beneWcial eVect of re-warm-up at half-time. Scand J Med Sci Sports 14:156–162
21. Garbing Award SA, Whippy BJ(1996). Effects of prior exercise on pulmonary gas-exchange kinetics during high-intensity exercise in humans. J Apply Physiol;80(1):99–107.
22. Urhausen A, Gabriel H,Kindermann W (1995) Blood hormones as markers of
23. Training stress and overtraining. Sports Med 20: 251–27.

Rheological and electrical properties of industrial polymers

[1]Israa Meften Hashim

University of Al_Qadisiyah, Nursing College

[2]Israafaisal ghazi

University of Al_Qadisiyah / College of engineering/material engineering department

Email:israa.meften@qu.edu.iq[1]

Email:israa.ghazi@qu.edu.iq [2]

Abstract:

The current polymer-based PVA-CMC-PEG is methyl cellulose (CMC) reinforced with both polyvinyl (PVA) and polyethylene glycol (PEG) and in different concentrations (g / mL3) (2, 3, 9, 3, 4, 4, 2. 6, 202). Some of these rheological properties have relative density and reduce viscosity. For these electrical properties, electrical conductivity measurements were then included calculation and molar analysis. The results indicated that all properties increase linearly with increasing concentration of components and properties except low viscosity, molar conductivity and degree of dissociation of samples.

Keywords: polymer, chemical products, mixture

Introduction:

Polymers are one of the most important industrial and chemical products alike, as they have been introduced into most of the daily life of both the individual and society as a whole and have replaced many of these traditional materials used in the past. The different need in polymers industrial and synthesized varieties, where the increased need for polymers with high quality efficiency and the required accomplishment and therefore have changed these modern and advanced studies in the field of polymer science in terms of development The new homogeneous polymers to this development in these new polymeric mixtures where polymer blends science has become the most important science in recent years, especially in those areas of economic, commercial and industrial. The polymeric here is defined as that mixture of two or more polymers and the reactive process is prepared here by the mixture of polymers in both liquid or solid states or in the molten phase [1997, et al, Grum] This mixture is called either Binary, Ternary, or Quaternary depending on the number of polymers [2006, Awham].

The main purpose of the preparation of the polymeric mixtures here is to obtain these new properties and properties (super properties) which cannot be found and reached in individual polymers alone. On those polymeric materials that possess those good mechanical and electrical properties.

The different methods in the preparation of polymeric mixtures are as follows:

1. Solid State:

It is the one that mixes the first polymer in the solid state (powder) with the second polymer, which is in the form of white powder and then dissolved here together in the appropriate solvent where this method is the most used methods in industry.

2. Liquid state:

It is by reaction, so that the first polymer is mixed with a second polymer in the liquid phase as the second polymer is polymerized through the first polymer after mixing them. [Freed, 2005].

1- Theoretical Part

Rheological Properties:

Viscosity here is one of the important phenomena in the materials used and manufactured in general, including those polymeric materials. Extension of polymeric molecules by researching the space of that solution [1971, Bilmeyer]. The polymeric solutions are uniquely different from the solutions of various other substances by being more viscous. Shear Viscosity is one of the liquid properties and expresses the resistance of liquid molecules in motion. Bajpai, et al). The viscosity of the polymeric solutions as a result of the friction of these polymeric molecules is explained by the solvent molecules when they move them together with the solution. This relative wife (ηrel) is also defined as the ratio between the wife's polymeric solution to the wife's pure solvent as in the following equation (Diaa et al. 2010):

$$\eta_{rel} = \frac{\eta_s}{\eta_o} ---(1)$$

Shear wife with distilled water and solution respectively.

3 - The specific viscosity ηsp Specific Viscosity

It is the ratio between the amount of increase in the viscosity of the solution as a result of its polymer solubility and the viscosity of the pure solvent so that the result is given by:

$$\eta_{sp} = \frac{(\eta_s - \eta_o)}{\eta_o} = \eta_{rel} - 1 ---(2)$$

The ratio between the specific viscosity and the concentration of solution (C) is called the reduction viscosity (ηred) Reduced Viscosity

The equation [2002, Wiley] shows:

$$\eta_{red} = \frac{\eta_{sp}}{C} ---(3)$$

2-Electrical Properties

Electrical conductivity is defined as the process in which the transfer of electrical charges from one location to another in that medium is under the influence of that electric field and here is the ionic conduction in those polymers due to the free movement between the ions and those impurities where the chemical composition of the polymer is here. Specific effect in ionic motion where the greater the conductivity of polymers the higher the temperature depending on the equation (Al-Bermany, 2003):

$$\sigma = \Psi e^{-\Delta u / RT} ---(4)$$

3- Practical Part:

Experimental Part:

3.1 Materials used in the experiment: The base material used herein

(A) Matrix Material: The base material used is carboxy methyl smimoz (Carboxymethyl Cellulose) where carboxymethyl cellulose is a high viscosity of ionic linear polymers and is characterized by dissolving in water and has a degree of fusion (CMC High viscosity) up to (227 °C) and is in the form of a white powder with a moderate smell Non-toxic.

B - reinforcing materials of the mixture: (PVA) Polyvinyl alcohol is characterized because it contains granules with the ability to dissolve B water in addition to its resistance to do solvents such as oils experiment whit Non-toxic melting point equivalent. (230°C)

3-2 Preparation of Polymer Blends Preparation of Polymer blends Prepared several mixtures of polymers (PVA - (CMC - PEG) by dissolving those specific weights of them in the volume chosen for the experiment (250 ml) of that distilled water as a kind of good solvent for these polymers The magnetic stirrer was used in the mixing process of the components used in order to obtain the most homogeneous mixture at a temperature of 50 ° C for a minimum duration of 45 min. / mL0 .44.0 .38, 0 .34, 0 .3, 0. 26, 0)

Then the cooling process of the mixtures to reach the temperature in the room has been carried out here some rheological and electrical measurements and calculated the concentrations of these mixtures: (Bermany - Al,2011)

4- Measurements:

The density of the mixture used for all concentrations was measured using a bottle of density and a capacity of 26 ml in addition to an electronic scale manufactured by the company (Mettler Switzerland) with a sensitivity of (+0.01). The viscosity ratio of all concentrations used in the experiment was measured using the German - made Rheocalc viscometer. The electrical connections were also measured using a British origin DDS - 307W conductivity meter.

Results and discussion:

1- Rheological calculations

Fig. (1) shows that there is a linear increase in the density value with increasing concentration of PVA- CMC-PEG mixture. Polymer and this increase is consistent with what the researcher obtained [Al-Berman, 2011].

2- Shear viscosity values and different concentrations of PVA-CMC-PEG mixture were found. Figure (2) shows the extent of change in shear viscosity ratios with these concentrations. Therefore, the increase in the concentration of the polymer in the mixture used and thus results in a high friction forces rotational and transition between those polymeric molecules and the solvent on the other hand (Numani, 2000).

3 - Those other types used for viscosity such as pouring and specificity behave behavior of sternal viscosity in the same form, through behavior or changes because they are derived from that sternal viscosity as part of it.

4- The relative and specific viscosity values were obtained using these equations (1) and (2) respectively. The results are shown in Figures (3) and (4). The reduced viscosity of PVA - CMC - PEG mixture was calculated using equation (3) and Fig. (5) ((AL-Moussawi, 2015)

5- Electrical Calculations

The electrical conductivity and the different concentrations of the mixture used (PVA- CMC - PEG) were measured by Figure (6) where it is noted that the conductivity increases with increasing concentration and due to the increase in concentration, resulting in an increase in the number of ions and free electrons regularly and resulting Increased electrode polarization within the solution and thus increased conductivity. (Al- Bermany, 2003)

FIGURE 1 Density change concentration with PVA–CMC–PEG mixture:

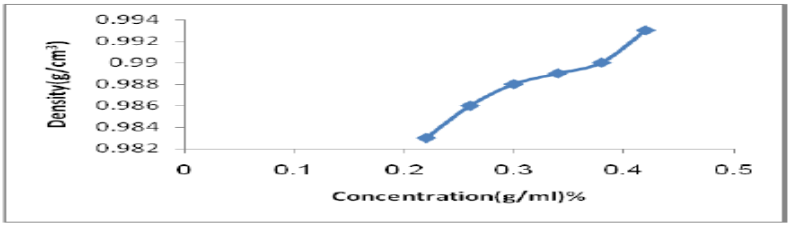


Fig. 2 Shear viscosity change with concentration of PVA–CMC–PEG:

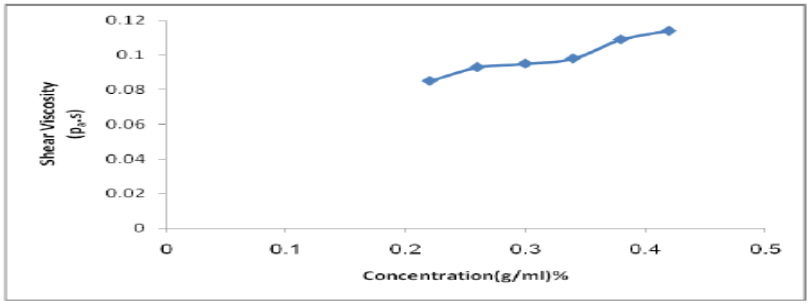


Figure 3: Relative viscosity change with concentration:

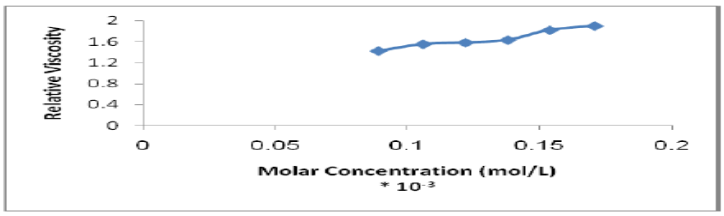


Figure 4: Specific viscosity change:

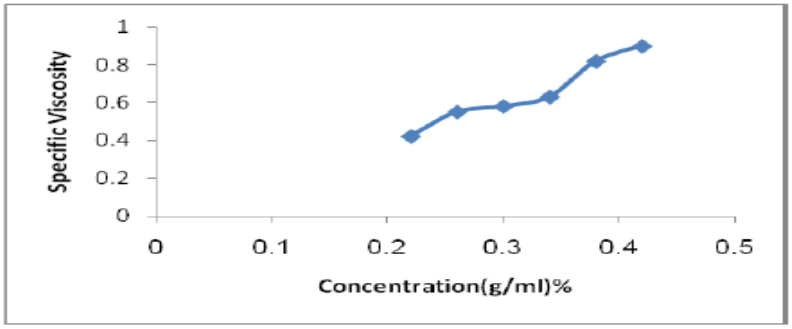


Figure (5) specific viscosity ratios:

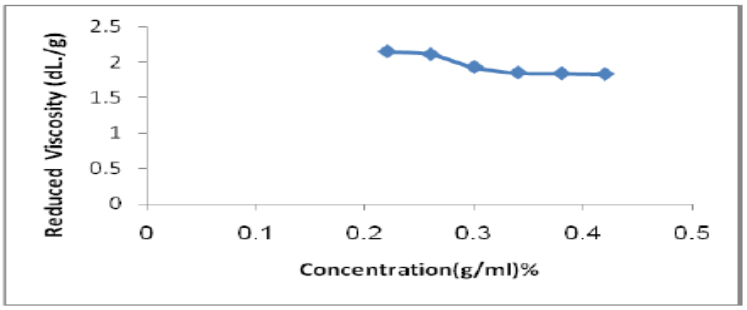
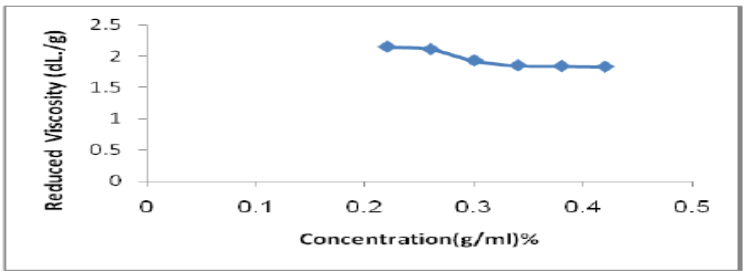


Figure 6 Change of electrical conductivity:



Conclusions

Conclusions In the light of the results of this research:

1. These polymers result in continuous changes in their rheological and electrical properties as a result of the addition of PVA–PEG to CMC, which can be utilized in many different industrial

applications at present.

2 - When adding (PVA - PEG) the ratio of viscosity to the substance (CMC) and through this we can get different degrees of viscosity for each change in the concentration of the reactant (PVA - PEG) This means obtaining new industrial applications and products for the polymer industry (CMC).

3 - When we add (PVA - PEG) to (CMC) resulted in high electrical conductivity of the mixture and through this can increase the rates of electrical conductivity by increasing the volume of concentration added to the reaction.

Arab Sources:

1. Al-Nomani, Abbas Hadi (2000), Effect of KAMA rays on some physical properties of hydroxyethylcellulose and methylcellulose, Master Thesis, University of Babylon - Faculty of Science

2. Hamad, Shaimaa Hussein Nofal (2014) Effect of polymer methyl cellulose addition on some physical properties of alcohol and its potential for industrial applications.

3. Hanna, Edmond Mikhael (1992), Electrochemistry, First Printing, Dar Al-Hekma for Printing and Publishing - Baghdad

4. Chemistry book for the second grade of scientific secondary, Hashemite Kingdom of Jordan, edition of 2004.

5. Natural Sciences, by Mohamed Ismail Omar, 2013 First Edition, Scientific Books House, Beirut.

6. Center of Excellence in Polymer Research and Applications, Ain Shams University

References:

1. References AL-Moussawi, A.H.K. (2015). "Effect of Adding Polyacrylamide on some Physical

2. Properties of Polyvinyl Alcohol and its Ability for Industrial Applications) ",

3. M.Sc. Thesis, College of Science, Babylon University. Al- Bermany A.K.J. (2003), "Electrical Properties of Resinex Polymer Babylon

4. University Journal ", Vol. 8, No. 3. Al- Bermany A KJ. (2011)," Study of some mechanical and theological properties of

5. PVA / FeCl3 by ultrasonic ", International journal of Advanced Scientific and Technical Research, Vol. 2, No.1, PP. 222.

6. Abd Al-Amiree S.H. (2003), "Effect of Gamma Ray and Temperature on Some

7. Physical Properties of Poly Styrene-Butadien (SBR) ", M.Sc. Thesis, College

8. of Science, Babylon University. Aneli1, J .: Zaikov G. and Mukbaniani O. (2011). "Electrical Conductivity of Polymer

9. Composites At mechanical Relaxation ", Chemistry and Chemical

10. Technology ", Vol.5, No. 2, PP. 188 Awham M.H. (2006)" Development and study of Blended-Base Polymer composites

11. "PhD Thesis, School of Applied Science - University of Technology Bajpai, AK, Shukla, S.K, Bhanu, S .; Kankane S. (2008)." Responsive polymers in

12. Controlled drug delivery ". Progress in Polymer Science, Vol.33, PP. 1088. Bilmeyer F. W. (1971)." Textbook of polymer science ", 2nd

Effectiveness of learning impacts Transferring of the games (volleyball- squash- tennis) on developing the accuracy of forehand or backhand clear strokes of Badminton players.

Raid Mhawes Zighair[1], *Wissam salah Abdul Hussein*[2]

1. *University of Baghdad .Iraq*
2. *University of Kerbala, Iraq*

***Corresponding author: (Zighair)** mhawesraid@scbaghdad.edu.iq

Abstract

Through the researchers' experience and their following-up to the Badminton, they noticed that most players ages (11-13) years suffer from being unable to perform the forehand or backhand clear strokes appropriately or perfectly. Thus, it affectsthe shuttlecock Transferringto the right place, so the researchers try to solve this problem through using exercises form a group of sports gamesin which the kinetic path is similar to the strokes. The most significant research aims were identifying the impacts of diverse practicing of the games (volleyball, tennis, and squash) on developing the forehand or backhand clear strokes of the Badminton players, as well as, identifying the best impacts of diverse practicing of the games (Volleyball, tennis, squash), besides, the usual exercises on developing the forehand or backhand clear strokes of the Badminton players.The researchers used the experimental approach by designing (two equivalent groups with pre- and post-test) because it fits the problem's nature and achieves the research objectives.The most significant results were that: diversity of practicing some skills (serving of volleyball, tennis and squash) has positive impacts on developing the forehand and backhand clear strokes of the badminton, in addition to the experimental group which practiced the exercises of volleyball, tennis, and squash in the post- test outperformed the control group. The most significant recommendations were: confirming following up the scientific and programmed technique in learning to facilitate and help in the educational process, as well as, confirming the benefits of the learning impacts transferring between the kinetic and semi- kinetic skills, in addition to investing the time.

Key Words: Diverse Practicing, Volleyball, Tennis, Squash, Forehand and Backhand Clear Strokes, and Badminton

1-Identfying the Research

1-1 The introduction and the research importance:-

The great scientific progress is a great fruit for scientists and specialists in the various fields of sciences. Here, we are interested in paying attention to the need of fields of physical education to a lot of scientific references and literature to pursue this rapid scientific development in the fields of physical education and the related sciences.

This has been clearly reflected on the sporting achievements, as we notice, in international and Olympic competitions, the high level of players in both the collective and individual games and in breaking the records continuously, especially in the individual games. In addition to the learner characteristics which should be exploited in the educational process. One of these characteristics is the transferring of the learning impacts, which is an important phenomenon in learning in general and kinetic learning in particular, in which the effect of learning a kinetic skill is transferred to another kinetic skill. Thus, the administrator of the educational process can invest time and effort, especially in the case of similarity of the kinetic performance of the skills of the game or the forms of kinetic performance of the same skill. The badminton is one of the individual games played by both sexes and that most of its skills played in an open-round, so it needs a high skill performance because of the changing of the playing plans during the single point, that led to the competition of countries in creating the best modern scientific bases through which the level of the learner skill performance can be developed. Transferring of learning impacts of the badminton basic skills based on the assumption that what the learner learns can be transferred to all fields of real life as the learning aims to prepare people for the future and if there is education there must be an impact to be transferred(1)

1-2 the Research Problem:-

Through the researchers' experience and their following-up to the Badminton, they noticed that most players ages (11-13) years suffer from being unable to perform the forehand or backhand clear strokes appropriately or perfectly. Thus, it affects the shuttlecock moving to the right place, so the researchers try to solve this problem through using exercises form a group of sport games in which the kinetic path is similar to the strokes in order to diversify and change the tool to obtain the appropriate force while adjusting the correct kinetic path and increase their excitement and suspense.

1-3 the Research Objectives:-

1-Preparing special exercises for the games of (volleyball, tennis and squash) to be similar to the kinetic path of the forehand and backhand clear strokes of the Badminton players

2-Identifying the diverse practicing impacts of the games (volleyball, tennis and squash) on developing the forehand and backhand clear strokes of the Badminton players.

3-Identifying the best impacts of the diverse practicing of the games (volleyball, tennis, and squash) and the usual exercises on developing the forehand and backhand clear strokes of the Badminton players.

1-4 the Research Hypothesis:-

1-There are significant statistical differences between the pre- and post-test of the control and experimental groups in favor of the post-test.

2- There are significant statistical differences between the pre- and post-test of the control and experimental groups in favor of the experimental group.

1-5 the research Fields:-

(1)Yarub Khyoun,kineticLearning Between Principle and Practice, Baghdad, The Rock Office for Printing and Publishing, 2002, p: 107

1- Human field: - players of the training center in Babylon province.

2-Temporal field: - 1/6/2019 till 1/10/2019.

3- The spatial field: - the closed hall in the district of Al-Mahweel , Babylon province.

2-Research methodology and field procedures:

2-1Research Approach:

The researchers used the experimental approach by designing (two equivalent groups with pre- and post-test) because it fits the problem's nature and achieves the research objectives.

2-2 Research community and sample:

The research sample presented the whole research community that consists of (8) players of the training center, who aged (11-13) for the season of 2019; it doesn't mean that the researchers used the comprehensive inventory method for the whole society, then they were divided by a draw into two groups; the first group is the experimental group, and the second is the control group.

2-3 Equivalence of the research groups:

To ensure the equivalence of the two groups, the researcher used the Mann-Whitney test, which showed no significant differences between the two groups as in Table (1).

Table (1) shows the equivalence of the research groups

Significance type	Significance level	Mann-Whitney value	Measuring unit	Statistical indicators / VariablesResearch
Non-significant	**0.45**	**10**	**degree**	**Forehand clear stroke**
Non-significant	**0.22**	**11**	**degree**	**Backhand clear stroke**

Where: n1=4, n2=4, and the Significance level (0.05).

2-4 Tools and devices used in the research:

1- Two integrated badminton courts.

2- (30Yonex) badminton rackets.

3-(10 Yonex boxes) of shuttlecocks, tennis and squash balls .

4- (10 roll) of Colored tape.

6- (5 Magic) colored pens.

7- (24) tennis and squash rackets.

8- (10 boxes) of tennis balls.

9-(10 balls) of volleyball

10- (2 Chinese) stop watches.

11-Pillars and strings (3m) high

12-Tests

13- Questionnaire.

14- Forms for data dump.

2-5 Skills Tests:

1- Forehand clear Stroke Test [(2)] .

-Test's name: Forehand clear stroke.

-Test's purpose: Measuring the forehand clear stroke**.**

-The required tools: Badminton rackets, string, additional pillars of (244cm) high, information form, a marked court designed for the test as in figure(1).

-Description of Performance:

1-After explaining the test to the testers, they have appropriate time for warm-up, then every tester has (5) experimental attempts.

2- The tester stands in the (x) marked area.

3- At the moment, the coach serves the shuttlecock for the tester; he can transfer if it's necessary to go through the attempt successfully. He has to hit the shuttlecock with the forehand clear stroke (from above the head) to serve it above the net and the string towards the area marked with degrees.

4- The tester has (12) attempts; only the best attempt is counted.

Evaluation of Performance:-

1- The tester has (3) points if the shuttlecock falls in the (50 cm) marked area, after the court back line.

2- The tester has (5) points if the shuttlecock falls in the (76 cm) marked area, between the court back line and the far doubled serving line.

(2)Moeen Mohamed Taha, the impact of training program with shuttlecocks of different speeds on developing the badminton skills. PhD thesis, University of Baghdad, Faculty of Physical Education, 2001, p: 64.

3-The tester has (4) points if the shuttlecock falls in the (70 cm) marked area, after the far doubled serving line.

5- The tester has (2) points if the shuttlecock falls in the (124 cm) marked area which starts from the end of point(4) till the imaginary line stretched below the string.

5-The highest point is given if the ball falls on the line between two points, but no point is given to the shuttlecock if it falls outside the court boundaries or hangs on the net.

6- The maximum limit of points, which the tester can have in the best (10) attempts, is (50) points.

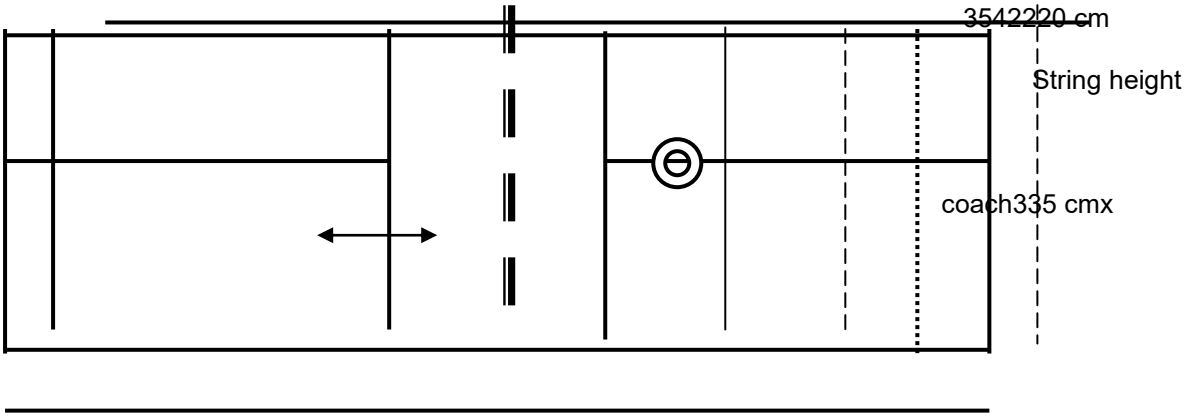


Figure (1) shows the badminton court designed for the forehand clear stroke test

2- The backhand clearstroke test: (3)

Test's name: backhand clear strokes.

Test's purpose: measuring the accuracy of backhand clear strokes.

Required tools: a marked badminton court as in figure (1), badminton rackets, tape, measuring tape, information form and shuttlecocks.

Description of performance:

1-After explaining the test to the testers, they have appropriate time for warm-up, then every tester has (5) experimental attempts.

2- The tester stands in the (x) marked area.

3- The coach serves the shuttlecock towards the tester left (if he holds the racket with his right hand and vice versa) so that he can hit the forehand clear stroke.

4- The tester has (12) attempts; only the best attempt is counted.

(3)Mazen Hadi Kazar, The Effect of Skilled Mental and Physical Training on Accuracy and Speed of Kinetic Responsiveness of Badminton Players, Master Thesis, Babylon University, Faculty of Physical Education, 2003, pp. 50-51.

5-The tester can Transfer to go through the attempt successfully, as well as, he can leave any shuttlecock which he thinks it's worthless to receive. If the coach thinks his serving is incorrect, he calls for(replay) and no attempt is counted.

6- The maximum limit of points, which the tester can have in the best (10) attempts, is (40) points.

Evaluation of Performance:

1- The tester has (1) points if the shuttlecock falls in the (198 cm) marked area stretched from the center line of the court below the net till the near serving line.

2- The tester has (2 or 3) points if the shuttlecock falls in the (198 cm) marked area which starts from the near serving line till the far double serving line.

3-The tester has (4) points if the shuttlecock falls in the (76 cm) marked area stretched after the court ending line.

4- The tester has (2) points if the shuttlecock falls in the (80 cm) marked area which separates between the far double serving line and the near individual serving line.

5- No point is given to the shuttlecock if it falls outside the court boundaries or hangs on the net.

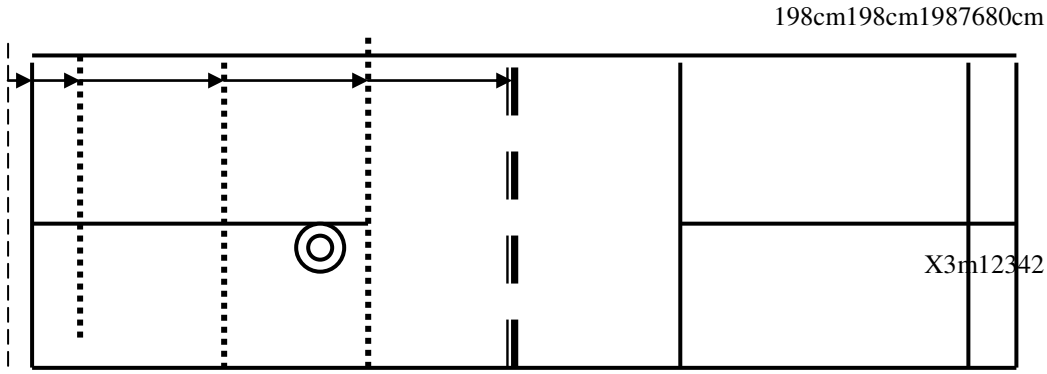


Figure (2) shows the badminton court designed for the backhand clear stroke test

2-6 Exploratory experience:

Date of Experience: 3/6/2019 a.m.

Place of Experience: The closed hall in Al-Mahweel district, Babylon Province.

The Sample: The exploratory sample consisted of (4) players of the training center in Babylon Province.

The Experience Objectives:

1- Introducing the assistant team to the tests nature and determining the extent of its efficiency.

2-Avoiding the obstacles that the researcher may face during carrying out the tests.

3-Finding out the approximate time for each test and the time taken for all the tests.

4- Ensuring the scientific transactions of the tests.

5- Identifying the appropriate time for the used exercises.

6- Determining if the exercises fit the individual sample or not.

2-7 The Exercises Used in the Research:-

The researchers used a group of exercises of some games (volleyball, tennis, squash) aiming to increase the effectiveness of the kinetic program by performing skills in differentextents(Parameters) and at different speeds, heights and directions to help provide the largest number of kinetic programs stored in the brain. The researcher also relied on the phenomenon of transferring the learning impacts through performing volleyball, tennis and squash exercises similar in the kinetic path to the skill of forehand and backhand clear strokes. The main experiment was applied on 5/6 till 8/7/2019 in The closed hall in Al-Mahweel district, Babylon Province where the experimental group had exercises of (volleyball, tennis, squash and exercises of forehand and backhand clear strokes), while the control group had only exercises of (forehand and backhand clear strokes of badminton).The researchers intervened on the main part of the educational unit time which was about (40) minutes as the individuals of the experimental group practiced (volleyball, tennis and squash exercises) for(24 minutes)+(forehand and backhand clear strokes with badminton) for two units a week.

2-8 the post- Tests

The post- tests of the forehand and backhand clear strokes of the badminton were applied on the two research groups, on 10/2/2019, in the closed hall in the of Mahaweel district, Babylon province, and at ten in the morning.

2-9 Statistical Means:

The statistical pouch (spss) was used to analyze the research data as follows:

Arithmetical mean, standard deviation, percentage, Ca 2 test, Whitney Test - Wilcoxin Test and Spearman Test.

3-Showing, analyzing and discussing of the results:

3-1 showing and analyzing of the pre- and post- test of the research groups for the skills tests:

After collecting the pre- and post-test data of the skill tests and the two research groups, in order to describe the results of the sample members, the researcher processed the data statistically using the Statistical dispersion and fragmentation measures. (3). the researcher used the Wilcoxin test to know the significant differences between the pre- and post- tests of the two research groups as shown in tables (2) and (3).

Table (2)

Shows the arithmetical mean value, standard deviation, the calculated value ofWelcoxin for pre- and post- tests and for the experimental group

Significance type	Significance level	the calculated value of Welcoxin	Post-test		Pre-test		tests
			n	h	n	h	
significant	**0.03**	**2.21**	**3.1928**		**2.11**	**20.5**	**Forehand clear stroke test**
significant	**0.02**	**2.222**	**2.1124**		**2.91**	**19**	**Backhand clear stroke test**

N=4, Significance level (0.05)

Table (3)

Shows the arithmetical mean value, standard deviation, the calculated value of Welcoxin for pre- and post- tests and for the control group

Significance type	Significance level	the calculated value of Welcoxin	Post-test		Pre-test		tests
			n	h	n	h	
significant	**0.00**	**2.203**	**2.47**	**39**	**2.11**	**21**	**Forehand clear stroke test**
significant	**0.00**	**2.211**	**1.13 30**		**1.39 19**		**backhand clear stroke test**

N=4= significant level (0.05).

3-2 Discussing the results of the pre- and post-tests of the research groups in the skills tests

From presenting and analyzing of the skills tests in the pre- and post-test, which are shown in Table (2 and 3), it was found that there are significant differences between the two groups for the benefit of the post-tests. The researchers attribute the evolution of the experimental group to the use of similar exercises to learn skills as using serving exercises of volleyball, tennis and squash that are similar to the skills of forehand and backhand clear strokes of badminton as"Whenever there are common factors between the subjects, exercise or training impacts on

the speed of learning the other subject" [4]Also, the repetition of similar exercises during the educational units helped to learn and consolidate the basic skills of badminton as 'learning similar movements in terms of repetition results in an easy and positive transferring to the maximum degree of learning.[5]The developing in the control group results is attributed to the approach prepared by the coach.

3-3 Showing and analyzing of the post-test results of the research groups in the skills tests

Table (4)

Shows the arithmetical mean value, standard deviation, the calculated value of Man Whitney Test for post- tests and for the first and second experimental groups

Significance type	Significance level	the calculated value of Whitney	Control group		experimental group		tests
			n	h	n	h	
significant	**0.00**	**3.19**	**2.47**	**28**	**2.47**	**39**	**Forehand clear stroke test**
significant	**0.00**	**2.11**	**2.11**	**24**	**1.13**	**30**	**backhand clear stroke test**

3-4 discussing the results of the post-tests of the research groups in the skills tests

The reason for the superiority of the experimental group over the control group is using exercises similar to the basic skills of badminton during the educational units, which included (volleyball serving, tennis serving, and stroke over the head in squash). similarity of kinetic paths between skills resulting in creating neuromuscular compatibilities which led to perfect and stability which in turn lead to skill developing as' using the kinetic compatibility for a long time and continuous repetition will lead to getting used to the framework of the kinetic, temporal and ideal paths.[6]

(4)Abdul Rahman Adas and Mohiuddin; Introduction to Psychology, 5th edition (Amman, Dar Al-Fikr for Printing and Publishing, 1995), p: 141.

(5)Abdul Rahman Adas and Mohiuddin , see the previous reference, p:142.

(6)Qasim Hassan Hussein; Physiology, Principles and Applications in the Field of Sports (Mosul, Dar Al-Hekma for printing and publishing, 1991), p: 47

The diversity of practice of a particular skill within a kinetic duty results in increasing experience , developing the mental and physical ability and possessing a store of information that can be referred to in modifying or changing.(7)

The positive transferring of the research skills is due to the similarity and likeness between the skill of overwhelming strokes and volleyball and tennis serving, which led to easy learning skills and positive transferring. Diversity and complexity of the kinetic models are necessary to enable us to face the changeable needs of the skills and this is consistent with Thorndike's theory of identical elements, which states that"transferring is positive whenever the similarity and likeness is greatly much in the elements of skills, whether in variables or responses or stimulants and responses together in both skills in which the transferring is required(8).

4- Conclusions and Recommendations

4-1-The Conclusions:

1-The diversity of some skills practice (volleyball, tennis and squash serving) has had a positive impact on developing forehand and backhand clear strokes in badminton.

2-The experimental group trained on volleyball, tennis, squash and badminton exercises in the post-test outperformed the control group.

4-2 The Recommendations:

1- Emphasizing the scientific and programmed method of learning in order to facilitate and help in the educational process.

2- Ensuring the benefit of the phenomenon of transferring learning impacts between skills with kinetic and similar path, as well as, the benefit of time investment.

3-Performing similar studies on different samples and ages.

(7) Wissam Salah Abdel Hussein, Badminton between Practice and Competition, Amman, Dar Radwan for printing and publishing, 2013, p 139.

(8) Wissam Salah and Samer Youssef, Kinetic Learning and its Applications in Physical and Sports Education, Beirut, Scientific Books House for Printing and Publishing, 2014, p. 167)-

The References

- Abdul Rahman Adas and Mohiuddin; Introduction to Psychology, 5th edition (Amman, Dar Al-Fikr for Printing and Publishing, 1995).

-Qasim Hassan Hussein; Physiology, Principles and Applications in the Field of Sports (Mosul, Dar Al-Hekma for printing and publishing, 1991).

- Fadl Mohsen Al-Azrjawi, Principles of Educational Psychology, Mosul, Dar Al Kutub for Printing and Publishing, 1991.

- Wissam Salah Abdel Hussein, Badminton between Practice and Competition, Amman, Dar Radwan for printing and publishing, 2013.

Wissam Salah Abdel-Hussein, the impact of a training curriculum in the correction of technical errors and the development of some mental abilities and the accuracy of some basic skills of badminton for youth, PhD thesis, University of Babylon, Faculty of Physical Education, 2011.

- Wissam Salah and Samer Youssef, Kinetic Learning and its Applications in Physical and Sports Education, Beirut, Scientific Books House for Printing and Publishing, 2014.

- Yarub Khyoun, KineticLearning Between Principle and Practice, Baghdad, The Rock Office for Printing and Publishing, 2002.

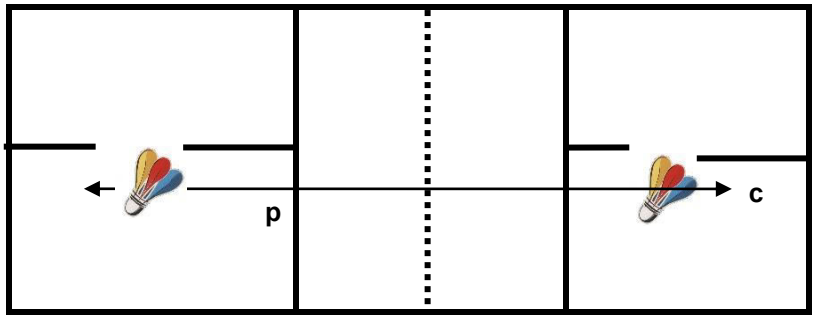
- Moeen Mohamed Taha, the impact of training program with shuttlecocks of different speeds on developing the badminton skills. PhD thesis, University of Baghdad, Faculty of Physical Education, 2001, p: 64.

- -Mazen Hadi Kazar, The Effect of Skilled Mental and Physical Training on Accuracy and Speed of Kinetic Responsiveness of Badminton Players, Master Thesis, Babylon University, Faculty of Physical Education, 2003.

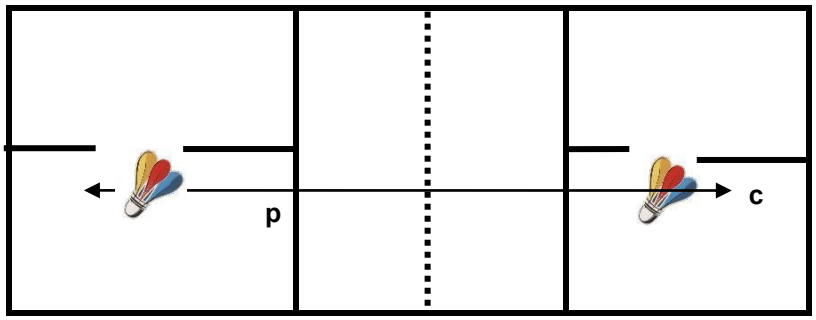
Appendix (1)

Models of the exercises used in the research

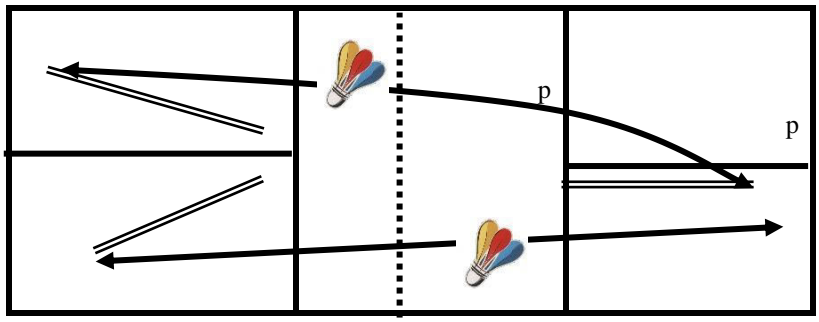
1-The coach stands against a player on the left side of the court and performs a forehand clear stroke, (8) attempts at one repetition. **C**: the coach, **p**: the player.



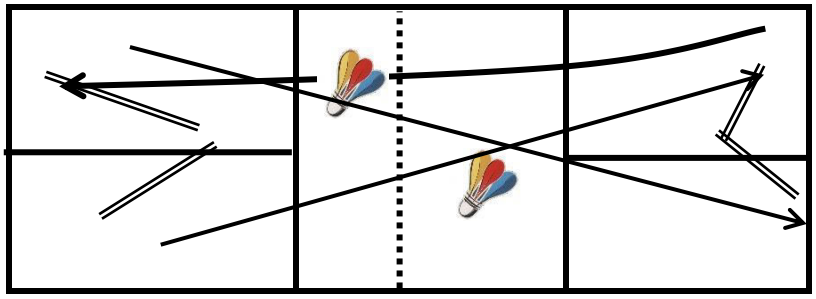
2-The coach stands against a player on the left side of the court and performs a backhand clear stroke, (8) attempts at one repetition. **C:** the coach, **p**: the player.

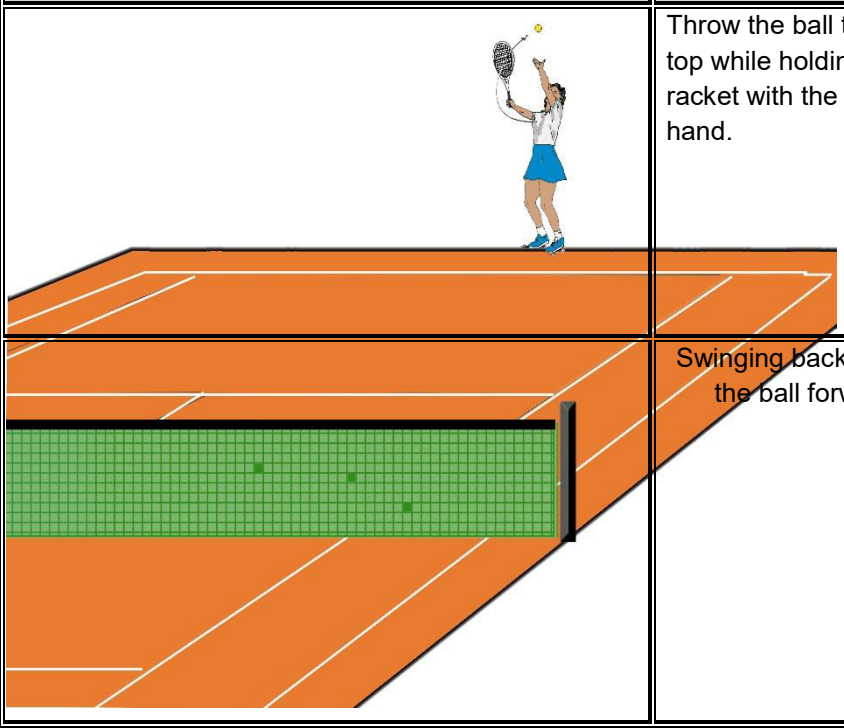


3-A player on the left side of the court hits the backhand clear stroke and a player in the middle hits the forehand clearstroke (one side to two sides) while touching the serving line. **C**:the coach, **p:**the player



4- Player vs. another player. One player hits the forehand clear stroke straight forward and the other player hits the forehand clear forward diagonally and return to the middle of the court for both players after each stroke. C: coach, p: player



Tennis	Exercise name	E
	Throw the ball to the top while holding the racket with the other hand.	1
	Swinging back and hit the ball forward	2

The Impact of Particular Exercises on Developing Certain Bio-Kinematic Variables and the Accuracy Performance of Defensive Skill in Volleyball Court

Hamza Fadhil Hasan[1*]

1. Ministry of Education, Basra Education Directorate, Iraq

*Corresponding author: Hasan (E.mail:hamza68fadel@gmail.com) Tel: +9647712579693

Abstract

Bio-mechanical analysis is considered as one of the bio-mechanics methods in studying the motion .It helps trainers and experts to raise the level of players by adopting the proper scientific method by using modern techniques and devices with the effect of training ,its methods , diversification of training units ,intensity and rest breaks. The problem of the study; it requires know-how of body status in every moment to counter the offensive tactics of the opponent .As well as, the speed and force of Thunder from different angles and heights that the defensive player must be faced in a firm defensive method and then starts to attack or push the ball onto the opponent's side. The aim of the study; to prepare a special exercises and to investigate its impact in developing certain Bio-Kinematic variables and the Accuracy Performance of Defensive Skill in Volleyball. The most important findings that there are significance differences in the angles variablesof the joints of the knee, hip, shoulder and elbow , the height of the ball center from the ground before and on touching the ball in addition to the angle of the ball bounce and the instantaneous velocity. In respect of the most crucial recommendations, they are the concerning of variables of the pre-touching phase and its impact on the moment of touching phase with the ball, to be in the right position, expand of fixed anvil in order to control the ball and to give considerable attention to exercises based on kinetic bases of skill.

Keywords: Experimental Study, defensive skill in court, volleyball

1- Introduction ;significance of the study and the problem of the study :

The athletic achievements bring about due to scholars' interest in the field of athletics by getting involved in the details of the player's body movements and the factors impacted on it during the technical performance of the game and its skills. Furthermore, the importance of other factors involved in conducting the skillful performance ,modern training aids ,technologies, physical, physiological, psychological and mechanical factors as well. The kinetic performance of skills based on bio-mechanic rules and basics to achieve the best performance. Bio-mechanical analysis is considered as one of the bio-mechanics methods in studying the motion .It helps trainers and experts to raise the level of players by adopting the proper scientific method by using modern techniques and devices that lead to develop the technical performance of the players. This science, training, its methods, diversification of training units,

intensity and rest breaks has a clear-cut impact in improving the digital and technical level in all games including the volleyball. It is noticed currently that international championships are characterized by rapid and powerful performance as a result of the development of the basic defensive and offensive skill of the game and for all domains. One of these basic defensive skills is the defense skill which considers as the major skills that limits offensive plans of the opponent's team. The success and strength of the defender raise the morale, motivations and plans of the team increasing the momentum of attacking and starting of it. Whenever the team can defend; the chances of attack are better, therefore the coach can put defensive and offensive plans against the opponent team. In view of the foregoing, the importance of the study reflects which the skill requires that the workouts be according to proper scientific bases in order to develop the ability of the quick reaction of defense and aware of kinetic and Bio-Kinematic variables of the attacker in order to obtain the best performance according to the mechanical foundations , the body is a kinematic chain that changes before and after hitting the ball ,"If he was expecting a quick kick , he will low his center area and extend his position" (5:1990:60) . The problem of study, the skill of defense is considered as one of the major basic defense in which the team turns into from defense to attack and it is also required the know-how of body status at every moment and aware of offensive tactics of the opponent team. As well as, the speed and force of Thunder from different angles and heights that the defensive player must be faced in a firm defensive method and then starts to attack or push the ball onto to the opponent's side. Thus, the researcher has studies the problem by preparing kinetic practices for developing the skill and its Bio-Kinematic variables that achieve speed, nervous and muscular reaction, increasing of visual perception and the controlling of body during the moment of performing the skill.

2- The aim of the study

The aim of the study is to prepare special kinetic practices in developing Certain Bio-Kinematic Variables and the Accuracy Performance of Defensive Skill in Volleyball Court and to investigate its impact in developing certain Bio-Kinematic variables Accuracy Performance of Skill.

3- Collection of data and samples of study

Junior's players of Al Midaina Sport Club in volleyball for the season (2018-2019) have been selected as the data of the study of 15 players, while the samples of the study have been intentionally selected of the defense player's .It includes to experimental groups and control groups .Each group includes 6 players of 80 % of data collection.

Data collection means, tools and used devices:

Data collections means: Arabic and foreign references-statistical aids, used tests and measurements

Used tools and Devices: volleyball court –certified 12 volleyballs–tape and measuring tape - Terraces, barriers and boxes

Used devices**: 1** video camera / Sony

- 6 Electronic timer / Casio , made in Japan –medical scale – 2 whistles- calculators

The procedures of field research, determination of skillful tests

- For determining the most skillful and physical tests, the researcher has collected and survey many of scientific sources in order to know and aware of tests where these tests are exposed to some experts in physical training and volleyball , thus the following tests have been selected:

1- the Accuracy of Defensive Skill test in court (13:1999:188)

Tests used in the study: The researcher has aware of some available sources (13: 1999:188) (15 :1987:290)(18 :2001:143-144-145-146-148-149) in order to select the special related tests ;subject to the accuracy and subjectivity in results of tests.

Bio-Kinematic Variables :The form of Bio-Kinematic Variables has been exposed of defense skill in the court of volleyball .The variables have been studied which got a percentage on a group of experts and specialists in Bio-Kinematic and training in volleyball .The variables of 80 % or more have been studied as follows :

Angle of knee joint before and at the moment of touching the ball - Angle of hip joint before and at the moment of touching the ball - Angle of elbow joint before and at the moment of touching the ball - The height of sphere center from ground at the moment of touching with ball - The angle of ball bounce from the arms after touching -Instantaneous velocity of ball bouncing from arms . .

Test and advanced videoing: the advanced videoing has been made on 01/2/2019 where accuracy performance of defense skill with volleyball has been measured. The advanced tests continued for two days that the equivalence of the sample was obtained .The researcher has used one video camera /Sony frequency 100 pics/seconds fitted with one tripod.

Camera used in this experiment, descriptive and main study .The height of focus was 1,25 m from ground while the distance between the center of camera and the player's movement 5 m.

Equivalent of sample: in order to ensure the equivalence of sample in the results of accuracy of performance of defense skill in the court with volleyball and some Anthropometry and Bio-Kinematic as in table (`1)

Table `1 shows the equivalence of the two groups (the experimental and control groups) in some the study variables

Variables	Experimental group			Control group			T-value
	M	S	C	M	S	C	
Total length (cm)	180	0.507	5.847	182.6	7.447	4.078	0.507
Man length (cm)	95	6.033	6.350	95.500	4.183	4.380	0.167
Arm length (cm)	76.833	7.678	9.993	77.833	5.980	7.683	0.252
Trunk length (cm)	55.833	3.920	7.020	56.833	4.445	7.821	0.413
Mass (kg)	72.000	8.366	7.619	74.666	9.791	13.113	0.507
Training age (year)	4	0.894	22.35	4	0.632	15.8	0.000
Running (20 m) from high starting	4.133	0.121	2.927	4.166	0.121	2.904	0.477
Test (9-3-6-3-9)	9.466	0.366	3.866	9.350	0.520	5.561	0.449
Nelson's test of Kinesthetic response	2.188	0.129	5.895	2.142	0.067	3.127	0.765
Harmony /throw and receive tennis balls	17.000	1.414	8.317	18.333	1.032	5.629	1.865
Bend the trunk in the front of standing	12.500	1.378	11.024	13.166	1.471	11.172	0.810
Extend and bend knees (20) seconds	23.500	1.974	8.4	23.166	1.471	6.349	0.331

The T value on free degree (10) and level (0.05) = 1.815

The main experiment **:** the main experiment has been made on 01/2/2019 on samples of 12 players , 6 players of experimental group and 6 players of control group by the presence of assistant staff .All the requirements of experiment have been available as per the measurement and height of camera and its dimensions from the player's moves above. To provide players with and adequate warm-up, then the experiment of the study has started and the five tries have been videoed for each player . Special kinetics exercises: After disclosing the exercises to the experts and specialists in the field of bio-mechanic and athletic training, the researcher has prepared special exercises according to bio-Kinematic with a kinetics performance similar to the variables related the defense skills in the court as the movement and body status for the kinetics phases of skills with the positions (1) and (5) by using ancillary training methods. The applying of especial exercises has lasted 8 weeks consists of three training unit weekly .Therefore, the total of training units are (24) units with a time frame (120) minutes to determine (30-50) minutes for the used special trainings. The used special trainings have been applied from the period (02/ 2 /2019 to 02/4 /2019) on the experimental group .While control group , it has been applied the followed curriculum articles by the coach. Posterior test and videoing: The posterior test has been made on 03/4/2019 on Al Midaina Sport Club , where accuracy performance of defense skill in the court of volleyball has been measured and the posterior tests are continued for two days in which results have been obtained by applying the training program on sample. The researcher used the same video camera and the same methods, dimensions and assistant staff.

Computer analysis of bio-Kinematic variables: Computer analysis has been made according to the following steps:

- The video material has been converted from videotape into files form
- Save the clips in form of files in my documents in computer /LENOVO (Core i5)
- All files and clips has converted by using (Allok 3Gp pspmpuipod video avi convertor)
- Move files (clips) to the program (Dratfist pro suit 5-5) installed on computer where angles, displacements and speed to be analyzed have been measured.

Statistical methods: data has been statistically processed by using SPSS 18 for data processing .

-Discussion of results:

Table (2) Illustrates the mean, standard deviations and t value of certain values of bio-Kinematic variables when performing defense skill in the court from the two positions (1) in the two tests advanced -test and posterior -test of experimental group

Bio-Kinematic variables when performing defense skill in the court from center (1)		Advanced/ experimental		Posterior / experimental		T value	Results
		M	S	M	S		
1	Angle of knee joint prior to touching	136.20	2.780	129.61	3.125	2.999	significance
2	Angle of knee joint at the moment of touching	106.26	2.621	92.328	4.199	5.692	significance
3	Angle of hip joint prior to touching	82.820	4.201	90.743	3.026	9.877	significance
4	Angle of hip joint at the moment of touching	82.075	3.450	93.780	1.672	6.427	significance
5	Angle of elbow prior to touching	138.38	2.074	145.00	1.685	6.555	significance
6	Angle of elbow at the moment of touching	163.50	1.731	174.00	1.327	14.145	significance
7	The height of ball at the moment of touching	55.671	2.882	63.638	1.907	4.869	significance
8	Angle of ball bouncing from arms	67.430	2.149	73.345	2.034	8.468	significance
9	Instantaneous velocity of bouncing ball from arms	8.805	0.792	7.194	0.512	7.347	significance

Bio-Kinematic variables when performing defense skill in the court from center (5)		Advanced/ experimental		Posterior / experimental		T value	Results
		M	S	M	S		
1	Angle of knee joint prior to touching	133.76	3.034	127.42	2.394	4.395	significance
2	Angle of knee joint at the moment of touching	94.610	2.354	87.413	1.385	4.227	significance
3	Angle of hip joint prior to touching	93.500	2.955	88.455	1.475	2.906	significance
4	Angle of hip joint at the moment of touching	92.446	1.639	86.601	1.251	5.164	significance
5	Angle of elbow prior to touching	134.59	2.284	145.48	1.730	16.529	significance
6	Angle of elbow at the moment of touching	153.62	1.763	168.46	1.809	24.422	significance
7	The height of ball at the moment of touching	53.708	1.850	59.560	1.571	5.123	significance
8	Angle of ball bouncing from arms	66.195	1.934	75.325	2.076	9.614	significance
9	Instantaneous velocity of bouncing ball from arms	9.113	0.704	7.913	0.901	2.463	significance
*	Accuracy skill defense in the court	15.833	2.786	40.166	1.169	21.251	significance

The T value on free degree (5) and level (0.05) = 2.015

In the light of data as in table 2 , it has been noticed that there are differences in all values of bio-Kinematic variables which are as follows:

In respect of the variable of knee angle prior to and at the moment of touching with ball from the two positions (1) and (5) , there are significance differences of the two variables in the advanced and posterior test in favor of the posterior test of the experimental group. The researcher has noticed that the reason behind such development as a result of using special kinetic exercises related to the training program that make the players to prepare and adopt with the body status and his visual perception that helps to aware of the place of ball ,its direction and the time of reaching with arms ,i.e. the development of muscular feeling of the kinetic power of arms to face the incoming ball .Moreover , it creates a basis making the body more balanced and established by bending the knees into down then to extend the trunk into forward and upper to meet the ball (12:2002:64) due to that the body is in the defense position .

The variable angle of hip joint prior to and at the moment of touching ball from the two positions (1) , we have noticed that there are significance differences in favor of the posterior test that gives a clear image of the body that it is considered as a Kinematic chain that such a part will be affected by the other part. The angle has developed which is 90 degree before touching , hence it will provide the player to see the course of upcoming ball and to achieve the balance of body and its preparation for the main part .This brought from the repeated certain exercises of reaction and the anticipation of upcoming ball according to the speed of performance and its variables .The standings of completion is required a reaction against the movable target (1:1997:190).

For at the moment of touching with ball, the value has developed and increased as a result of the reaction of ground and kinetic process and the extension of body's joints at the moment of bouncing ball at an angle (93) degree that contributing to stop body due to that the trunk is vertical on the basis and the performance skill from movement. The center of body weight inside the trunk or around it , then its movement will be successful .Therefore ,the kinetic duty will be successes(9 :2007:117).We notice that the data mentioned in table above that the angle degree is decreased of hip joint before touching from position (5) on posterior test which is considered a development in preparing body for main duty and the body status must be more lower at the moment of touching with ball in order to preserve the balance of body and to prepare both arms for capturing the ball force (momentum) ,when the pressure of body down to below as a result of its weight ,the surface will reflect on body equally in amount and reverse in direction which is the reaction power (8 :1999:164) ,i.e. the moment of touching with ball , the body works after it to withdraw the power of ball..Whereas the variable pf elbow joint angle before and at the moment of touching with ball from the two position (1) and (5), we have noticed that there are significance differences in the posterior test with more angle in the position (1) of (174) and less than in the position (5) of(168) degree. The difference in the position (5) has been in a difficult status in order to prepare the ball to the arranger which he is in the position (1) where the arranger be in a suitable direction of defender .Furthermore, the arms position when meeting the ball ,in this case , it will allow to increase the distribution of power on a large scale and extent of arms. One of the characteristics of power are the point of its impact on any area "that exposed to actual effect of little power where the generated pressure as a result of this power will be very huge" (8:1999:185).Hence, the status of arms will be extended and opened in order to catch the ball in greater area when clashing. According to the above-mentioned ,the phase prior to touching with ball is very crucial because it contributes in preparing the joints and the muscles of body for the main part which is the phase of touching or the moment of touching with ball in which the kinetic duty will be achieved (the aim of movement).In respect of the variable of the ball height from the ground at the moment of touching of the two positions (1) and (5) that there is a significance difference in favor of the posterior test and the defense from the position (1) is more higher as a result of the ball defense in a place which contributes making reach to the preparer in the position (2) facing to the defender .Therefore, it will impact on the variables of mechanical performances ;moreover , the angle of ball fall down on the defender "whenever the :value of this angle is increased , the body becomes more balanced ".(6 : 2011:134).This angle is impacted by the height of the center of body weight or its departure from the base of balance. For the variable of ball bouncing angle from the arms from the two positions (1) and (5) where the amount of difference in the position (1) is less which is (73,345) degree because of the position (5) is far from the preparer, so that the player needs to increase the angle of bouncing angle in order to the ball takes the curved path for a long period of time "the angle of recoil is directly proportional with the angle of incidence to more than 90 degree and the bouncing ball affects with the ground "(6 :2011:160).In respect of the variable of instantaneousness velocity of the

bouncing ball from the arms from the two positions (1) and (5) that there are significance differences for the posterior test with a larger proportion from the position (1) which depends on the prior variables in achieving the target of kinetics (the bouncing of ball) .The defender can be able to control the ball rapidly. While the accuracy of defense skill in the court , it has been noticed that there are significance differences in favor of the posterior test ,i.e. the training operations according to the used approach contribute in developing the skill in the player that it has been showed from the test of skill accuracy and the development of Bio-Kinematic variables that leads and shows to the development of the speed of operations in the nerve system that take place in sensitization ,moving sialate to the brain and to transmit the kinetic nervous signals to the muscles related to the performance (7: 2017:88-89).

Table (3), shows the mean, standard deviations, t value of the certain Bio-Kinematic variables when performing the defense skill in the court from the position (1) in the two tests (advanced and posterior)of the control group)

Bio-Kinematic variables when performing defense skill in the court from center (1)		Advanced/ experimental		Posterior / experimental		Tvalue	Results
		M	S	M	S		
1	Angle of knee joint prior to touching	134.50	1.958	132.72	1.416	1.670	Non-significance
2	Angle of knee joint at the moment of touching	105.49	1.937	102.53	2.434	2.159	significance
3	Angle of hip joint prior to touching	80.42	1.578	82.391	1.396	1.646	Not-significance
4	Angle of hip joint at the moment of touching	81.633	1.484	83.588	2.192	1.612	Not-significance
5	Angle of elbow prior to touching	137.39	1.656	139.30	2.222	1.788	Not-significance
6	Angle of elbow at the moment of touching	162.82	1.817	166.38	1.229	3.518	significance
7	The height of ball at the moment of touching	54.401	1.175	57.488	1.125	7.314	significance
8	Angle of ball bouncing from arms	66.175	5.481	68.451	1.731	0.823	Not-significance
9	Instantaneous velocity of bouncing ball from arms	8.815	0.473	8.149	0.832	3.131	significance

Table (3),shows the mean, standard deviations ,t value of the certain Bio-Kinematic variables when performing the defense skill in the court from the position (5) in the two tests (advanced and posterior)of the control group)

Bio-Kinematic variables when performing defense skill in the court from center (5)		Advanced/ experimental		Posterior / Experimental		T value	Result
		M	S	M	S		
1	Angle of knee joint prior to touching	134.10	2.514	132.71	1.837	0.911	Not-significance
2	Angle of knee joint at the moment of touching	95.683	1.295	92.333	1.043	4.304	significance
3	Angle of hip joint prior to touching	93.111	1.786	91.680	1.810	1.803	Not-significance
4	Angle of hip joint at the moment of touching	92.333	1.244	90.523	1.207	4.677	significance
5	Angle of elbow prior to touching	133.30	1.849	138.28	2.134	3.094	significance
6	Angle of elbow at the moment of touching	151.60	1.489	156.48	1.958	3.642	significance
7	The height of ball at the moment of touching	52.598	1.432	54.400	1.497	1.513	Not - significance
8	Angle of ball bouncing from arms	67.258	3.166	70.395	1.636	2.042	significance
9	Instantaneous velocity of bouncing ball from arms	9.308	0.416	8.965	0.650	2.008	Not-significance
*	Accuracy skill defense in the court	16.666	2.804	24.500	1.974	4.832	significance

The T value on free degree (5) and level (0.05) = 2.015

In the light of the above-mentioned details in the table (3) of the sample and the control group , it has been observed that there are minor significance differences of the study variables as follows: In respect of the variable of knee angle before touching, there are no significance differences, while the variable of knee angle at the moment of touching , there are significance differences in the two tests (the advanced and posterior tests) in favor of posterior test but with minor proportion. The practicing and repeating process according to the adopted approach by the trainer contributes partially in skill but it is different in results from the specified approach in developing the skill according to mechanical bases prepared for this purpose. For the variable of hip joint angle before and at the moment of touching in the position (1) ,there are no significance differences .While the variable of hip joint angle before touching in the position (5) , there are no significance differences .In respect of hip joint at the moment of touching , there are very minor significance differences .The researcher has noticed that this improvement as a result of practicing skill where the trunk has a major role in the kinetic in assistance to move to the kinetic to the limbs in order to achieve the purpose and aim of kinetic (4 :1996:218) .While at the moment of touching with ball , it has been noticed that there are significance differences and the researcher has been observed that the

value of such differences give a clear-cut image of the minor amount of development directly or indirectly with the control group and it is the characteristic of automatic and it happens through the continuing training and it appears by the exterior(20 :1987:63).For the variable of the elbow joint before and at the moment of touching in the position (5) , there are significance differences and it shows that the practicing ,training and kinetic preparation especially the regulation of the process of muscles by the wrong and right ,guidance and the power of effect(19 :2008:58).While the variable of ball height from the ground at the moment of touching in the position (1), there is a minor significance difference which is 3 cm.It is very minor and the practicing and repetition enhance the process of kinetic harmony as a result of the knowledge of player in the parts of details of skill and his comprehension of related information and the ability of self-note and self-correction comparative with the trainee explanation (19:2008:47).In respect of position (5) , there were no significance differences. While the variable of ball bouncing angle from the arms , there have been significance differences in favor of the posterior test in the two position (1) and (5) ,i.e. the angle is developed as a result of practicing and the achievement of the skill aim to reach the ball to the preparer. That is to say , there is a minor development for the reason of not ascertain in detail of skill and it needs for different kind of incentives on the sensory receptors whether they are optical ,tactile or vocal leading to awareness ,understanding and attention separately from the receptive incentives from the outside environment then to select the appropriate responses (11:2016:271).For the variable of Instantaneous velocity of the bouncing ball from the arms in the position (1) only , there are significance differences in favor of posterior test and the researcher has been noticed that the practicing of defense makes the player to perform the skill incompletely and certain variables have not significance differences and other have including the speed of the ball. The repetition and practicing assist in developing and improving the performance a little, i.e. the approach of trainee doesn't confirm precisely on the parts of defense skill in the court and it may be adequate for certain individuals and not for others. Others need for more repetitions for the purpose of achieving the proficiency of all group individuals (21 :2002:87).In respect of the defense skill accuracy in the court , it is observed that there are significance differences in favor of the posterior test but in a little level due to lack of intensive training on the developing skill according to trainings depend on the development of sensory speed and the response to movement and this requires to the assistance of players in performing the skill and attention on the course of ball and the method of using body and the estimating of the place of ball reaching in time and its receiving and the accuracy of its performance (3:1996:316) .

Table (4),shows the mean, standard deviations ,t value of the certain Bio-Kinematic variables when performing the defense skill in the court from the position (1) in the posterior test of the two group (experimental and control)

Bio-Kinematic variables when performing defense skill in the court from center (1)		experimental		Control		Tvalue	Results
		M	S	M	S		
1	Angle of knee joint prior to touching	129.38	3.262	132.72	1.416	2.297	Significance
2	Angle of knee joint at the moment of touching	92.328	4.199	102.53	2.434	5.148	Significance
3	Angle of hip joint prior to touching	90.743	3.026	82.391	1.396	6.137	Significance
4	Angle of hip joint at the moment of touching	93.780	1.672	83.588	2.192	9.053	Significance
5	Angle of elbow prior to touching	145.30	1.685	139.30	2.222	5.273	Significance
6	Angle of elbow at the moment of touching	174.52	1.327	166.38	1.294	11.44 0	Significance
7	The height of ball at the moment of ouching	63.638	1.907	57.488	1.125	6.803	Significance
8	Angle of ball bouncing from arms	73.345	2.034	68.451	1.731	4.486	Significance
9	Instantaneous velocity of bouncing ball from arms	7.193	0.513	8.150	0.873	2.314	Significance

'ble (4),shows the mean, standard deviations ,t value of the certain Bio-Kinematic variables when performing the defense skill in the court from the position (5) in the posterior test of the two group (experimental and control)

Bio-Kinematic variables when performing defense skill in the court from center (5)		experimental		Control		Tvalue	Results
		M	S	M	S		
1	Angle of knee joint prior to touching	127.42	2.394	132.71	1.837	4.291	Significance
2	Angle of knee joint at the moment of touching	87.413	1.925	92.333	1.043	5.503	Significance
3	Angle of hip joint prior to touching	88.455	1.475	91.680	1.810	3.382	Significance
4	Angle of hip joint at the moment of touching	86.601	1.251	90.523	1.207	5.522	Significance
5	Angle of elbow prior to touching	145.48	1.730	138.28	2.134	6.420	Significance
6	Angle of elbow at the moment of touching	168.46	1.809	156.48	1.958	11.015	Significance
7	The height of ball at the moment of touching	59.560	1.571	54.400	1.497	5.822	Significance
8	Angle of ball bouncing from arms	75.323	2.076	70.395	1.636	4.566	Significance
9	Instantaneous velocity of bouncing ball from arms	7.913	0.901	8.965	0.650	2.316	Significance
*	Accuracy skill defense in the court	40.166	1.169	24.500	1.974	16.722	Significance

The T value on free degree (10) and level (0.05) = 1.812

It has been observed in table (4) that there are significance differences in the posterior tests between the control and experimental groups in favor of experimental group in all Bio-Kinematicvariables.The researcher has noticed that the reason behind this development due to the prepared special exercises in the approach according to mechanical bases of skill ,i.e. the players had enabled by applying the special exercises and make the status of body in compatible with the technical foundations of defense against the incoming ball and to realize its power ,speed ,direction and height from the ground .This development has been noticed in the angle of knee joint before and at the moment of touching in the position (1) and (5) with the experimental group as a result of controlling with the status of feet and knees depending on the information of central nerve system which transmitting the kinetic nerve signals that come out from the bone marrow to the spine and end at each and every nerve limb upcoming from kinetic nerve cell in the area of muscular nerve connection area (2:2003:121). The quick reaction and motor response exercises have contributed in transmitting the kinetic nerve signal and the muscular contractions according to the inventory in the memory including the knee angle before and at the moment of touching the ball and both knees are bending in an angle less than (90) degree and this status for the knee will facilitate the forward kinetic and the trunk shall be mild standing and the elbows are to close from the two hips. In respect of hip joint before and at the moment of touching in the position (1) and (5) in favor of the experimental group , the researcher has noticed that the players had be able to control their bodies' status and the hip especially during the movement of preparation before touching the ball until the main status (the aim of movement) ,i.e. the bouncing of ball and we noticed that the hip is in an angle more than (90) degree from the position (1) and less than (90) degree ,i.e. the trunk is progressing forward as a try in preparation of the body status of both arms in order to confront the power of incoming ball from the opponent .They are auxiliary factors shared at the moment of ball bouncing in order to make joints and the common parts are established including the muscles and it is responsible of establishing of certain parts of the body against the tightening of the contracted muscles or against the counterforce.(6 :2011:26).While the angle of elbow joint before and at the moment of touching in the position (1) and (5) but there is a difference between one position and another according to the angle of fall of ball , the distance of defender of the attacker ,the speed of ball and distance .The researcher has noticed that the angle value becomes bigger in the position (1) because of the extension of the arm make the defender able to control the ball when hit with the surface of forearms to make a flat horizontal surface .The horizontal position is necessary to keep the ball in the defender court. At the moment of bouncing , both arms should be static with no motion in order to capture the thrust .After that , he reverses back from the ball while the body is moving to be more close (5:1990:60).For the variable of ball height from the ground at the moment of touching in the position (1) and (5) , the researcher has figured out that the relationship between the area of base and the height of center of body is determined by the angle and it is called the angle of incidence. It is a direct

relation that the stability degree is very huge whenever the angle of incidence becomes bigger (8:1999:210).The touching with ball should be in suitable place in order to provide a good angle of bouncing and the status of trunk will determine this angle and it contributes significantly in transmitting the movement to the arms. While the bouncing angle of the ball from the arms before and at the moment of touching in the position (1) and (5) in favor of experimental , the researcher has supposed the development of the angle value as a result of the repetition and the effect of certain exercises according to the mechanical foundations of skill that contribute of improvement of the previous variables , hence the center area of body will be reduced as a result of bending the knees and hips where such position creates a suitable base that made the players are able to control of the angle of ball bouncing and to achieve the falying way of ball as a form of arch to take a long period of time in the air in order to reach to the preparer .Such passing will be at the angle of bouncing from the body and the path of body will be curved(14:1998:270). For Instantaneous velocity of the bouncing ball from the arm before and at the moment of touching in the position (1) and (5) , the development was in favor of the experimental group as a result of improving the variables of performance in the preparatory part (before the touching) and the development continues to the Bio-Kinematic Variables in the main part (at the moment of touching the ball) and we have noticed that the speed of bouncing ball in the position (1) is slower and it is the best to be controlled by the preparer. It is the repetition result of exercises that generate and create the muscular feeling by controlling with the hit power (the action) and the bouncing with ball (reaction) and it is the clash power hit with ball by the arms , while the power of bouncing , it will return the ball to its original position after the modification in its form as a result of hit (6 :2011:154).The defense in the position (5) , it was a very speed and it has a relation with the body position and the difficulty of facing the incoming ball from the position (4) .It has been showed that through the performance variables before the touching and at the moment of touching with the ball.In respect of control group , we have observed that the speed of ball is more that the position (1) and (5) , so that this leads to the difficulty of controlling the ball by the preparer and it has a relation with the previous variables before and at the moment of touching .While the accuracy of defense skill in the court , it is cleared that there are significance differences in favor of the experimental group ,i.e. the special exercises have an crucial and influential impact on the response of muscles as a result of transmitting the nerve kinetic signals in the brain directly .The muscles are responded quickly depending on the transmitting nerve sialate(7:2017:89). This comes due to the reason of repeating the exercises and experience of the player in the place ,time and kinetic dynamic ,therefore the player can be able to deal with this situation and to face the balls .

Findings and recommendations

Findings

- It has been noticed that the special exercises have a positive effect on developing certain Bio-Kinematic Variables and the Accuracy Performance of Defensive Skill on the court between the two groups (experimental and control) and in favor of the experimental group.
- It has been showed that the preparation stage before touching has impacted on the skill aim (main stage)
- Bio-Kinematic chain that exists in defense skill in the court is related by joints and it is formed as a closed Bio-Kinematic chain because of its relation with ground.
- There is a difference in the values of Bio-Kinematic variables which are the angles of knees, hips, shoulders and elbow joints prior to and at the moment of touching with ball in defense in the two positions (1) and (5) against the diametrical thunder in the two positions (2) and (4) .
- There is a difference in the values of Bio-Kinematic variables which are the height of the ball from ground at the moment of touching and the angle of bouncing ball from arms ,Instantaneous velocity from arms in defense at the positions (1) and (5) against the diametrical thunder from the positions (2) and (4)

Recommendation

- To confirm on the importance of special exercises in developing Certain Bio-Kinematic Variables and the Accuracy Performance of Defensive Skill in Volleyball Court
- To pay attention on variables at the moment of touching with ball by increasing the speed ,attention ,take the right and appropriate position ,decreasing the center of weight and to expand the basis in order to enable the defender for controlling the bouncing of ball.
- To pay attention on exercises according to the kinetic basics of skill and training as per the technical stages of kinetic performance and for each position of defense positions in the court.
- To confirm that the body status and the velocity of Bio-Kinematic Variablesin defense are be according to the position of defense area ,type of counter-attack and the speed of moving to face it.

References

1- Abo Alola Ahmed Abdulfatah: the Athletic training :physiological foundations ,edt.1,Egypt ,Al Fkr Al Arabi Publishing House ,1997

2- Abo Alola Ahmed Abdulfatah: physiology of training and sport .edt.1,Egypt ,Al Fkr Al Arabi Publishing House ,2003 .

3- AkramZaki Al Khataiba:ModernVollyball Encyclopedia Al Fkr Al Arabi Publishing House ,1996.

4- Bastwaisi Ahmed :Basics and theories of Kinetics ,edt.1,Egypt ,Al Fkr Al Arabi Publishing House ,1996.

5-Bob Jersy: Volleyball for professional translated by Risankhoraibitmajeed and AbdulzahraHameediKhigher education pritnsk 1990 .

6- Hussein Mardan Omer and AyadAbdulrahman:Bio-mechanic in athletic movements ,edit. 1 , the holy Najaf print,2011

7- RisanKhoraibit:Sport Training Encyclopedia-Physical fitness, Edt.1,Cairo,Al Fikr Al Arabi Publishing House,2017.

8- Sameer Mosalat Al Hashimi:Sport Bio-mechanic,Edt. 2,Mosil,Books For Publishing and Printing House,1999 .

9- SareehAbdulkareem Al Fadhli: Bio-mechanic applications in sport training and kinetic performance ,Baghdad,Oday Al Ekili printing ,2007.

10 - Adil Abdul Baseer Ali: Bio-mechanic and integration between the theory and application in the field of sport ,edt.2,Cairo,1998.

11 - Isam Al DeenMitwali Abdullah and Ibrahim Abdulrazaq Mohammed :an introduction to the principals and the nature of kinetics ,Edt:1,Qairo,Al Kitab center for publishing ,2016.

12- Aqeel Al Katib and AmerJabbar:volleyball ,IndividualModernTechnic and Tactic ,Baghdad , Higher Education Printers ,2002

13- Ali Mustafa Taha :volleyball-History-education-tarining-anaysis-law,edt.:1,cairo ,Al fikr Al arabi publishing house,1999.

14- Qasim Hassan Hussein and ImanShakirMahmood: mechanic principles and foundations of sport movements ,edt.:1,Amman,Dar Al fikr Al Arabi publishing hounse ,1998.

15- QaisNajiAbduljabbar and Bastwesi Ahmed :Tests ,measurements and principles of statistics in the field,Baghdad ,University of Baghdad printing ,1987.

16- Mohammed Hassan AlawiandOsamkamilRatib: Scientific research in physical education and psychological sport ,cairo, Al Fikr Al Arabi publishing house,1999.

17- Mohammed SobhiHasanain and Hamdi Abdul Monim : Scientific Foundations of Volleyball and the measurement methods,edt.:2,Cairo , Al Katib center for publishing ,1997

18-marwanAbdulmajeed : The Scientific Encyclopedia of Volleyball , Oman ,1 , AL-warraq Establishment ,2001.

19- Nahida Abed Zaid Al Delimi: Foundations and Principles of Kinetic ,edt.:1,Najaf ,Dar Al Dhiyaa for printing and dsigining ,2008.20–WajeehMahjoob: kinetic analysis , Baghdad ,Higher Education printing ,1987.

21 - YareebKhaioon :Kinetic education between principal and application ,Baghdad ,Al Sakhra for publishing ,2002

The negative values learned by some faculty members in the Faculty of Physical Education and Sports Sciences University of Baghdad

M.D. Abdelnaser Merza Hamza

1. University of Baghdad College of Physical Education and Sports Sciences

alnasermerza@gmail.com

Abstract

The aim of the research was to identify the values of the results of the level of the measured negative score of the teachers of the College of Physical Education and Mathematical Sciences University of Baghdad (Handball Article Volleyball Material Basketball) There was a discrepancy in the possession of the negative values learned among the members of the research sample, The researcher noted that the degree of the level of educated negativity experienced by the teaching is one of the things that must be taken a major part of the interest of researchers for their direct link to the study of the faculty of physical education and sports sciences and the number of (30) Teaching ability of optimal performance during the process of teaching, The researcher used a number of statistical methods to deal with the results and after presenting the results and discussing them. The researcher reached a number of conclusions, such as that there is an urgent need for attention because of the high degree of negative learning. Handball instructors, volleyball and basketball have not yet reached the required level. Therefore, the researcher recommends that the attention of the teachers be taken to their level, which is an essential part of the teaching curriculum for handball, especially with regard to the learned negativity What the researcher recommends the need to develop the skills and abilities and special attention Altdresen aspect of knowledge so as to ensure a high degree of performance of their teaching
.

Keywords: Negative values taught by some faculty.

1-Definition of research:

1-1-Introduction and importance of research:

In order to be able to keep abreast of the modern development, we must look at all areas that are relevant to achieving the level that qualifies the teachers to match the teaching of other countries. As progress in the level is not limited to the physical, skill and planning aspects, there is an important aspect that is no less important than these aspects But it is sometimes at the forefront of which is the cognitive and psychological aspect, which has become the decisive factor in achieving the performance of most of the teachers because of the impact of this on the transfer of information to the learner. The learned negativity is one of the most important things that need to be understood and learned by the university teacher so that he can deal with the students according to the level they are going through as the learned negativity is (the individual's belief that he is unable to influence the course of things remains negative, believing that his positivity is useless) And the fact that the researcher is one of the teaching of the Faculty of Physical Education and Sports Science and study the handball field observed cases of teachers, including the lack of influence the course of their affairs and remain passive, believing that their positivity is useless. The state of the learned negativity differs from one teaching to the next, as some suffer from learned negativity, while others are low. Hence the importance of research in the knowledge of the level of the negative educated by the teaching of handball and whether it suffers from the negative educated at a high or low level. In view of the experience of the researcher Ktadrisi in the Faculty of Physical Education and Sports Science University of Baghdad for more than fifteen years in handball and follow-up training in general and especially the teachers of handball and volleyball and basketball there is a problem in the level of the negative education that passes through teaching and is one of the things that must be taken The researcher believes that this educated negativity greatly affects the ability of the teacher to transmit the information to the learner in particular and the educational process in general. Therefore, the researcher came to study the values of

the learned negativity in a number of teaching handball, volleyball and basketball material whether they are the most or less.

2- Research methodology and procedures

2-1 Research Methodology

The researcher used the descriptive method in the survey method for its content and the nature of the research. The measure of the studied negativity was distributed to the members of the research sample.

2-2 Research Sample

Such as a search sample (30)faculty members at the University of Baghdad College of Physical Education and Sports Sciences for the year 2019. The sample was selected by drawing lots from the college teaching group. The measured negative score on the sample was randomly distributed

2-3 Search Tool

The researcher used the measure of learned negativity, Appendix (1) and contained (13) words that measured the values of the learned negativity.

2-4Statistical means

The researcher used the percentage equation in order to reach the results

3-Present and discuss the results

3-1Presentation of results

Table (1)

Explains the percentage of the negative values learned for some faculty members at the University of Baghdad

T	Paragraphs	It is highly applicable	Very little	It does not apply to him
1-	When you are asked to solve a very difficult mathematical problem that you have already solved, you are: A - Refuses to do it for fear of failure again. B - try again because you will succeed in resolving when repeated	%60,416	%27,083	%12,500
2-	If you fail several times to learn games, you will : A- Increase attention and concentration to learn B- believes that there is no point in trying	%60,416	%25	%14.583
3-	If you are offered a solution to the mystery of failure of all - :students to solve it, you A- You refuse to subscribe because you believe that the outcome is doomed to fail. B - progress on the solution because you are able to do so.	%41,666	%31,250	%27,083
4-	,When your father doubted your ability to pass the math exam	%45,833	%35,416	%18,750

	A - believes that his doubts are true. B - trying to achieve success and prove that his doubts are incorrect.			
5-	If you are asked to participate in a race that has already failed to win an award, then you: A - You participate to receive the reward already B - do not participate because it is a waste of time	%39,583	%33,333	%27,983
6-	When the teacher offers you to return the exam you failed previously, you will: A- Welcome because you will succeed. B - hesitate and refuse to retake the exam because your luck is bad.	%68,750	%18,750	%12,500
7-	When your father tells you that your memory is weak You . A- His opinion is correct; B-He insists on changing his mind.	%47,916	%20,833	%31,250
8-	When you get a high grade in one of the lessons you did not expect to get it you believe that A-This is just a coincidence B- your serious study behind it	%14,250	%4,083	%81,583
9-	If your answer to a question is better than before, then: A - believe that the teacher has explained well B - believes that good reading has the biggest role	%77,083	%2,083	%20,833
10-	When you are in the examination room, you : A - Gather your ideas quickly to answer. B-You feel unable to focus your thoughts.	%47,916	%14,583	%37,500
11-	Suppose that your performance in one of the subjects as usual was not good. A - because you did not make the real effort in the study. B - because your memory sometimes be too weak.	%66,666	%37,500	%14,583
12-	If you miss a poem assigned to you in school, you consider the reason for this: A - The effort is not enough to memorize the words well. B- The words of the poem are very difficult.	%77,166	%14,583	%8,444
13-	If you are asked by a professor of Arabic to write a fictional story that some students have failed to write, then you are: A- You refuse to subscribe because you will not be better than others. B-You are so eager for success.	%81,250	%8,444	%10,416

It is clear from Table (1) that the highest rate of response applies to a large extent (81,250%) and in favor of the thirteenth phrase (refuse to participate because you will not be better than others) followed by the twelfth statement (the words of the poem is very difficult), which got 77,166), Followed by the ninth phrase (you think the teacher explained it well) and 77,083%, followed by the sixth phrase (hesitant and refuse to return the exam because you are bad) and 750,68%. The first and second terms refer to (By fear of failure again believe that it is useless to try and obtained an equal share for each of them (60,416%).

Some of the members of the research sample who chose the word "apply a little" and the highest proportion of the term of the eleventh (because your memory sometimes is too weak), where the rate

(37,500%) followed by the fourth (try to succeed and prove that (33,333%) followed by the third phrase (offered to solve it because you are able to do so), and its percentage (31,250%) followed by the phrase The first (try again because you will succeed in resolving when repeated) and the ratio is (27,083%) followed by the seventh phrase (insist on changing his opinion) and proportion (20,833%) The words 10th, 12th, and Tan refer to (Gathering your ideas quickly to answer that the effort is not enough to memorize the words well) and their proportion (14,583%).

While some of the members of the research sample denied the words that they did not see fit in their favor, they answered them by saying: "It does not apply to them." When you get a high score in one of the lessons you did not expect to get it, (37,500%) and the seventh sentence (when your father tells you that your memory is weak, you are: longer than you have been) His true opinion insists on changing his mind) to deny by (250,31%), followed by exile The third and fifth Ware, which obtained the rate (27.083%) followed by the ninth ferry obtained by (20.833%), the eleventh phrase followed by (14.583%)When we want to explain this result we can return to the characteristics of the person who is characterized by negative learned as he can not control the causes of the results, a negative psychological state in which the individual to the conviction that he does not have sufficient self-sufficient to achieve its goals or tasks required by past experience In which failure is repeated until it reaches the point of learning that it is incapable of it, and is aware that external events are the ones that run it, and can not cope with it and are accompanied by professional failure (64,1998, Seligman) .

3-2 Discussion of results

The goal of the research was to identify the values of the learned negatives and challenges in the teaching of handball, volleyball and basketball in the College of Physical Education and Sports Sciences, University of Baghdad. By showing the results, which exceeded (50%) to the possession of the majority of the research sample of the learned and affected by the affected,

Aldrisi exposed in the years to the problems because of the circumstances experienced by Iraq, which affected him directly and these in turn affected the usual learner one of these problems are the negative educated they see it represents the inability to insist on success and to seek that the result is inevitable is the same does not change until If you work with all the efforts that are available to the teaching, and therefore we see through the results obtained that the most trainees have a negative trend by choosing the scales of the measure, which represents the trend of the negative educated and this affected their behavior in the educational process in general and the student in particular.

The impact on the negative values, which lead to a sense of failure and failure to change and shift towards the best because there is an end to unsatisfactory and does not meet the ambition in other words has not been achieved to the real objectives that have been developed for the educational process does not achieve excellent All this led to the teaching of retreat and force The same is true of not changing the reality without making attempts to succeed and since teaching is an important part of the educational process, it needs to be the educational system as a whole without exception to the ambulance can be salvaged and reconsider the educational process as a whole.

4-Conclusions and recommendations

4-1Conclusions

1-The value of the educated negative received the highest percentage in the paragraphs (refuse to subscribe because you will not be better than others) and followed by (the words of the poem is very difficult) and followed by (believe that the teacher has explained well) and followed by (hesitate and refuse to return the exam because your luck is bad) Refuses to do it out of fear of failure once again believe it is useless to try.(

2 - Denial of the words that do not fit the values of negative learning in the members of the research sample and the highest ratio is (when you get a high degree in one of the lessons did not expect to get it, you believe that - just a coincidence or - your serious study behind it.

5-2Recommendations

1-the need to provide all material and moral potential for teaching and sense is one of the pillars of the educational process without which there can be no success or development in the future of the country and return is a university professor.

2 - Rehabilitation of the educational process through the inclusion of teachers in workshops and workshops inside and outside the country to change negative ideas.

Sources

-Alyan Mustafa et al.: Methods and Methods of Scientific Research 1 (Amman, Dar Al Safa Publishing and Distribution, 2000

- Al-Farahati, Mr. Mahmoud: The effectiveness of a program to guide cognitive deficit reduction in the learner (PhD thesis) Mansoura, Egypt (2002).

-Seligman, M.E.P., (1998): Learned Optimism , pocket books New York , NY.

Effectiveness of Continuous and Timely Feedback Using Education Technology in Developing Some Basic Motor Skills for People with Special Needs and Learning (6-10) Years

Abdulhussain Majed mohammed[1], RIAD JUMAA HASSAN[1] ,ALI KHOMAN ALWAN[1]

1. **The Faculty of Physical Education and Sports Science University of Qadisiyah**

***Corresponding author:**

Assist prof. ALI KHOMAN ALWAN (Email: handball.2014@yahoo.com)

Abstract

The aim of this research is to identify the effectiveness of continuous and timely feedback using education technology in developing some basic motor skills. The researchers hypothesized that there are significant differences between the results of the tests before and after the curriculum for some basic motor skills for people with special needs who can learn (6-10) years. The researchers used the experimental method for its relevance and the nature of the research. The research sample included the students of the Raja Institute for people with special needs who can learn and for ages (6-10) years and the number of (40) pupils. Continuous and simultaneous use of education technology develops in some basic motor skills in the post-test of the experimental sample was the most important recommendations to use the above variable for its effective effect in the development of basic motor skills for people with special needs.

Keyword: special needs, social responsibilities, education technology

1. Introduction

The welfare of people with special needs is one of the social responsibilities that should be entrusted to public and private sector institutions, as well as relevant civil society institutions, which stem from the legitimacy of their right to integrate into society and equal opportunities in all aspects of life, thus contributing to the creation of conditions for. In particular, people with special needs generally have available and potential abilities that can be available through training, rehabilitation, rehabilitation, practice, and patience, which must start from the family through educational, rehabilitation, training and operational institutions. This is achieved through community participation without marginalization or discrimination on the

basis of disability, especially since the level of care, care, and inclusion of persons with special needs is one of the main criteria for the cultural development of societies. Many studies and research on DAH and the disabled in Iraq have not sufficiently focused on their social conditions, to determine the size and level of care, facilities and services provided to them, the institutions provided in the Technical and Humanitarian Statement, and the potential technical sponsors of institutions for people with special needs and the extent of their utilization in order to overcome difficulties. Identify the difficulties that limit the effectiveness of such care and hinder the integration of the person with special needs into society and limit their effective contribution to the development process, with a view to reaching some of the findings and recommendations that we believe contribute to the best way. To take care of people with special needs and contribute to solving the problems and reduce the challenges they face. The importance of this research lies in the development of motor skills for these characteristics of the learners' symptom campaign for the tutorial. Therefore, the researcher felt that the yen needs to conduct this study in the hope that the results of this study will help fill the gap, even if small, in the development and completion of the work of institutes and centers dealing with people with special needs, as the first beneficiary of this study in Iraq.

2. Search procedures

The researchers used the experimental approach to solve the research problem in a two-way approach to suit the nature of the problem.

1.2 Research community and sample

The research community consisted of students of the Raja Institute for Mental Retardation, who are able to learn and for the academic year 2018 - 2019 and those between the ages of (6 - 10) years, the size of the research community reached (40) pupils and a group of (10) pupils was excluded from the research community in order to conduct the exploratory experiment as well as pupils reluctant. Therefore, the sample of the research sample reached (20) pupils and they were divided by lot into two control and experimental groups.

2.2 The homogeneity and equality of the members of the research community. Researchers conducted the homogeneity and equality of the members of the research community as shown in Table (1).

Table (1)It shows the homogeneity and parity of the control and experimental groups

No	Variables	Experimental group				Control group				The value of T.	Significance
		middle	deviation	middle	skewers	middle	deviation	middle	Skewers		
1	Age	14.63	0.52	15.00	-0.64	14.38	0.92	15.00	-1.00	0.67	moral
2	the weight	57.25	0.89	57.50	-0.62	57.38	0.92	58.00	-1.00	0.28	moral
3	Length	165.38	2.92	166.00	-0.86	165.88	2.59	166.50	-0.94	0.36	moral
4	Measurement the speed Kinetic For the arms	29.38	0.74	29.50	-0.82	28.63	0.52	29.00	-0.64	2.34	moral
5	Test ran 10 m from the jumper start	2.88	0.64	3.00	0.07	2.88	0.64	3.00	0.07	0.00	moral
6	Peaceful correction test	5.30	0.21	5.35	-0.58	5.44	0.32	5.50	0.07	1.01	moral
7	High-bandwidth test	40.28	0.16	40.35	-0.90	40.24	0.16	40.25	-0.26	0.47	moral
8	Chest handling with both hands	7.28	0.24	7.35	-0.37	7.06	0.90	7.50	-0.44	0.64	moral

The value of (t) tabular = 1.734 at the significance level (0.05)

2.3. Identification of basic motor skills: Basic motor skills were identified after all the basic motor skills were presented to a group of experts and specialists on a range of skills (under discussion).

2.4. Staff tests and select appropriate tests for basic motor skills

Two tests were selected for all the basic motor skills approved and the tests were presented to experts and arbitrators to choose the appropriate test for movements or add a test they deem appropriate.

1. Operating distance (20 meters)
2. Partridge right and left distance) 10 m)
3. 3. Long jump of stability
4. Throw and stand
5. Kick the football

6. Moving balance

2.5. Research Procedures: The researcher conducted the tests according to the following:

2.5.1. Tribal tests: tests of motor skills. The researcher conducted the tests according to the following: After determining the sample, the researcher conducted on Sunday and Monday on 3-4 / 11/20 18 tests on the total tin at nine o'clock in the morning "At the Institute Square, please foreigners sports for two days as follows: Fix conditions related to tests such as space, time and method of testing, under the supervision of the researcher for the purpose of achieving the same conditions as possible during the conduct of subsequent tests

2.5.2. Proposed program Objective of the program: Develop the motor capabilities of the research sample. Through extensive readings of the scientific references dealing with the nature and characteristics of the mentally handicapped with the category (slow learning) and their needs and abilities to practice motor activity and the use of studies carried out in this category and through consultants in this field and an exploratory experience and its results, which include curriculum units: Implementation of the curriculum (12) weeks by (24) teaching units and (2) teaching units per week and time (45) minutes for each unit of education divided as follows:

Introductory part: aims to prepare students psychologically and stimulate blood circulation, which is a set of simple movements represented by the Swedish warm-up.

The main part (35 BC): includes two parts)

A. Explain one of the practical motor skills with the help of children as a model and give them a nutrition review as needed:

B. Students' performance of motor skills with continuous guidance and participation of the researcher and the assistant team to perform the skill continuously:

Final shear (BC) aims to prepare the sample to return to normal and return it to a relaxed state and return to its ranks.

2.5.3.Posteriori tests

Researcher held the post tests after the completion of the application of the educational training curriculum for a period of one day and in the same sequence in on Sunday and Monday18 20/1 / 6-5 ,The researcher was keen that the circumstances in which the tests were

conducted after the similar to the conditions in which the tests were done before the tribal, as mentioned earlier .They are similar in terms of space, time and test method.

2.6. Statisticalmethods :The researcher used the statistical bag spas to process data statistically"

3. Presentation and discussion of results: This chapter will show the findings of the research according to its objectives,and in the light of the statistical treatment of these data were discussed these results.

3.1. Presentation of control group members in basic motor skills tests

Table (2)Shows the differences in the pre- and post-tests of the control variables of the control group

No	Variables	Pre-test		Post test		Calculated value	Significance
		C	A	C	A		
1	Jump out of constancy	1,37	2.9	1,64	4.4	2,76	moral
2	The receipt	0.84	3.5	0,82	4.3	1,71	random
3	Throwing from the top	1,75	3,2	0.51	4.9	2,77	moral
4	Jogging	0.57	2,99	1,36	4.2	3,11	moral

C Crosstab = 2.26 at freedom degree (9) and significance level 0.05

Regarding variable motor tests, the result of statistics showed that there is a difference between the pre- and post-test in the arithmetic circles and the motor tests except the skill of receipt was not significant, the researcher attributes this to the program followed in the institute and the nature of the lessons of sports and repetition and practice during the performance of exercise.

3.2. Presentation of the experimental group in basic motor skills tests

Table (3)Shows the differences in the pre- and post-tests of the research variables of the experimental group

No	Variables	Pre-test		Post test		Calculated value	Significance
		C	A	C	A		
1	Jump out of constancy	0,96	6.4	0.67	3,3	7,61	moral
2	The receipt	1,26	5.4	1,13	3,2	3,49	random
3	Throwing from the top	0.63	5,53	1,19	2.9	5,39	moral
4	Jogging	0.64	5,36	0.28	3,25	10,7	moral

C Crosstab = 2.26 at freedom degree (9) and significance level 0.05

In the motor tests, a variable as a result of the statistics showed that there is a difference between pre-test in the calculations of the circuits and tests of the four kinetic characteristics of the researcher to follow the thrill and repetition and facilitate skill by providing observations of both species as needed, as the developed sample attributed to educational units were Rich in learning tools where enthusiasm raises the sample, which increases the effectiveness of their learning and conducting races between the sample and the record of encouragement and awarding prizes for the influence of the winner in this confirms (Nader Fahmy) that the promotion of the child of the important points that indicate positive pain, Lord, when conducting any successful program [1]. Mention (Alaa Abdul Baqi) "Mentally handicapped child who needs to repeat the performance constantly so that the child to absorb multiple skills [2].

1.3. Presentation of the comparison between the members of the control and experimental groups in the basic motor skills tests

Table (4)It shows the differences in the post tests of the research variables of the control and experimental groups

No	Variables	Pre-test		Post test		Calculated value	Significance
		C	A	C	A		
1	Jump out of constancy	3,31	0,96	6.4	1,64	4.4	moral
2	The receipt	2,3	1,26	5.4	0,82	4.3	random
3	Throwing from the top	2,32	0.63	5,53	0.51	4.9	moral
4	Jogging	2,3	0.64	5,36	1,36	4.2	moral

The value of (t) tabular = 1.734 at the significance level (0.05)

- Between table (4) the arithmetic media and the standard deviations of the pre- and post-tests of the motor tests of the four tests skills assess the performance as the value of(C) Calculated greater than the spreadsheet (1.734) at the level of significance (0.05) and the degree of freedom (18) For all motor skills,the significance of the differences are significant for the benefit of the post test.

- Where the table shows the evolution in the degree of evaluation of the tests before and after the motor skills of the sample individuals where the researcher attributes the reason for the evolution of the sample performance in the post-test to the continuation of the sample in the daily exercises and their commitment to guidance when correcting errors, if any, which helped to perform the rest of the skills as well as their association

with this what was said (Hilmi Ibrahim and Leila Mr. Farhat1998), we must emphasize that the only assistance that can be provided to the mentally retarded is the practice of physical education [3].

- The choice of the corresponding sample to apply the vocabulary curriculum role in the development of their performance as the researcher test reconnaissance believed a role , said the researcher to choose the sample capable of applying the vocabulary curriculum and then the experimental sample evolution in the evaluation posttest compared with the evaluation of tribal ascribes the researcher to continue to sample training and their commitment to giving the researcher freedom for sample members at specific times to vary in the performance of exercises where (Gallaher) (provide adequate opportunities for the development of kinetic forms gives the child all the limits of evolution by increasing freedom of movement)

4. Conclusions and Recommendations

4.1. Conclusions

The curriculum based on continuous and timely feedback using instructional technology has developed some basic motor skills in the post-test of the experimental sample.

4.2 Recommendations

The most important recommendations were the use of continuous and timely feedback methodology using education technology for its effective effect in developing basic motor skills for people with special needs.

References:

1. Helmy Ibrahim, Layla El Sayed Farhan: Physical Education and Recreation for the Disabled, Dar Al Kotob Publishing, Cairo, 1st floor, 1998.

2. Alaa Abdel Baqi Ibrahim: a Training program for children with mental disabilities, Faculty of Education, Ain Shams University, I, 1993

3. Nader Fahmi Al - Zyoud: Teaching Mentally Retarded Children, 3rd Floor, Dar Al - Fikr Al - Arabi, Publishing and Distribution, Jordan, 1995.

4. Gallahue .D. understanding motor development in children .wiley& sons N.y.1982

5. Loovis, E.M.andErsing, W.F.Assessing& Programming Gross motor Development for children blooming in college town press. V.S.A.1979.

6. Nader Fahmi Al-Zyoud: Education of Mentally Retarded Children, "Third Floor, Dar Al-Fikr Al-Arabi, Publishing and Distribution, Jordan, 1995, p. 104.

7. Alaa Abdel Baqi Ibrahim: Training Program for Children with Mental Disabilities, Faculty of Education, Ain Shams University, 1st Floor, 1997, p. 11.

8. Helmy Ibrahim, Laila El-Sayed Farhan: Physical Education and Recreation for the Disabled, Dar Al Kotob Publishing, Cairo, First Floor, 1998, 224.

9. (Gallahue .D. Under constant motor development in children. Wiley & sons Ny1982.p229